



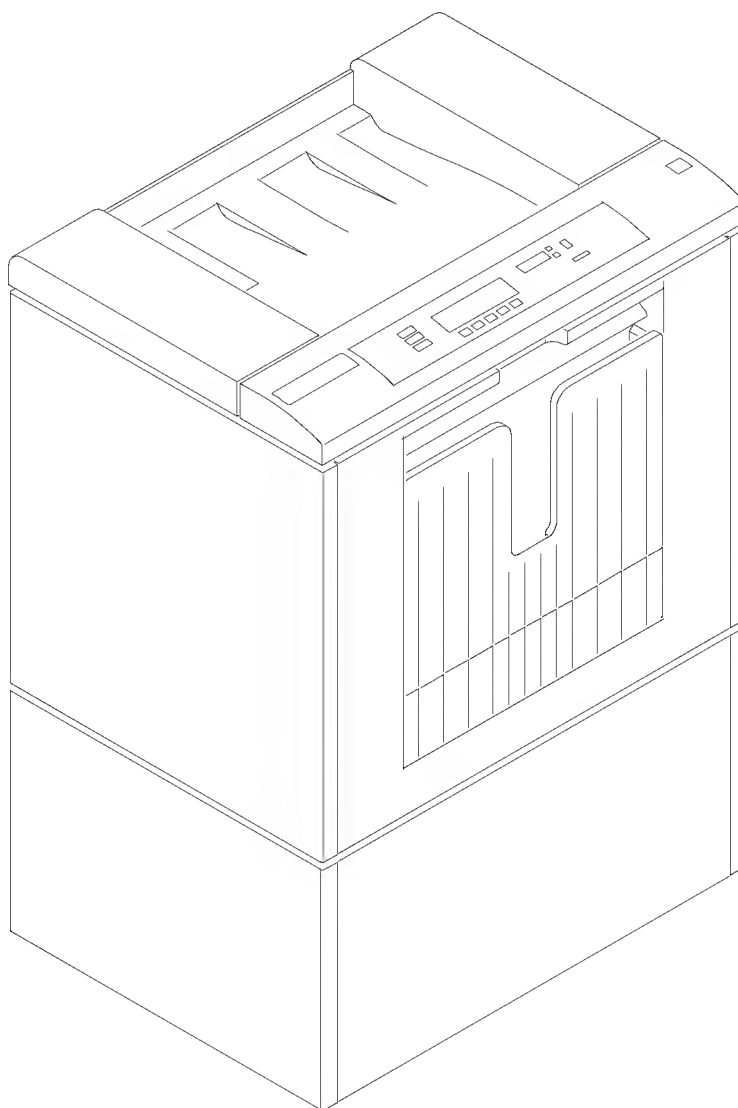
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4/91

SERVICE MANUAL
for the
Kodak X-Omat 270 RA PROCESSOR



H104_0107DA

PLEASE NOTE

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WARNING

To avoid hazardous conditions, keep floors and floor coverings around your *Kodak X-Omat 270* RA PROCESSOR and associated drains clean and dry at all times. Any accumulation of fluids from mixing tanks, drain lines, etc, should be cleaned up immediately. In the event of an accumulation of liquid due to backup, overflow, or other malfunctions of the drain associated with your *X-Omat* PROCESSOR, call a plumber or other contractor to correct any problem with the drain. Kodak accepts no responsibility or liability whatsoever for the serviceability of any drain connected to or associated with a *Kodak X-Omat* PROCESSOR. Such drains are the sole responsibility of the customer.

CAUTION

This equipment includes parts and assemblies sensitive to damage from electrostatic discharge. Use caution to prevent damage during all service procedures.

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Special Tools

IMPORTANT

Use qualified personnel to service the PROCESSOR.

WARNING

Dangerous Voltage. Before you replace electrical components, move the main wall CIRCUIT BREAKER to "OFF". Lock the wall CIRCUIT BREAKER and attach a MAGNETIC POWER WARNING SIGN TL-1926 to warn others not to energize the PROCESSOR while you are performing service.

Tool No.	Description
TL-2431	Air Meter
TL-1434	Carpenter's Level, approximately 30 cm (12 in.) long
TL-2170	Clamps
699574	Diagnostics Diskette
TL-4430	Extraction Tool
TL-3346	Grounding Kit
TL-4391	Interface Cable
TL-2324	Lithium Ball and Roller Bearing Grease
TL-1926	Magnetic Power Warning Sign
--	Portable Computer ¹
TL-3230	Sealant
TL-4460	Spray Bar Brush
TL-2192	Thermal Grease

¹ The following applies to the PORTABLE COMPUTER:

- An IBM compatible computer with MS-DOS version 3.0 or higher installed on the hard disk and with a 720 kilobyte, 3½-in. disk drive.
- A serial communications port configured as COM 1: Refer to the user manual for the PORTABLE COMPUTER.

Electrostatic Discharge

Overview

ESD--electrostatic discharge--is a primary source of:

- product downtime
- lost productivity
- costly repairs

While one cannot feel a static charge of less than 3,500 volts, as few as 30 volts can damage or destroy essential components in electronic equipment.

Effective ESD control requires following these guidelines.

Personnel Awareness

Everyone within the organization needs to be aware of ESD, because partial ESD control is no ESD control at all. Please note:

- ESD is a primary source of frustrating equipment failures and intermittent malfunctions.
- ESD affects productivity **and** profitability.
- ESD can be controlled.

General Precautions

- **Do not** store trash near static-sensitive equipment.
- **Do not** place plastic materials near electronic components. Trash-can liners and styrofoam cups generate static electricity, which can damage or destroy electronic components.

Preventive Measures

- Always look for an ESD warning label before doing any procedure involving static-sensitive components such as CIRCUIT BOARDS. All static-sensitive components are marked with bright graphic labels, which frequently include instructions. Follow all label instructions.
- If the work area is carpeted, spray the carpet with an antistatic solution. In low-humidity environments, spray carpets periodically with an antistatic preparation, available at local stores or through Kodak as TL-3832.
- Wear a grounding strap when handling static-sensitive components. Always make certain that the clip remains attached to a properly grounded, unpainted, clean surface.
- Repair static-sensitive components at an ESD-protected work station or use a portable grounding mat. For help in setting up an ESD-protected work station, contact your Kodak representative.
- When moving static-sensitive components from one area to another, insert and transport the components in ESD-protective packaging. Transparent antistatic bags are available from a variety of manufacturers and will help shield components from ESD damage.

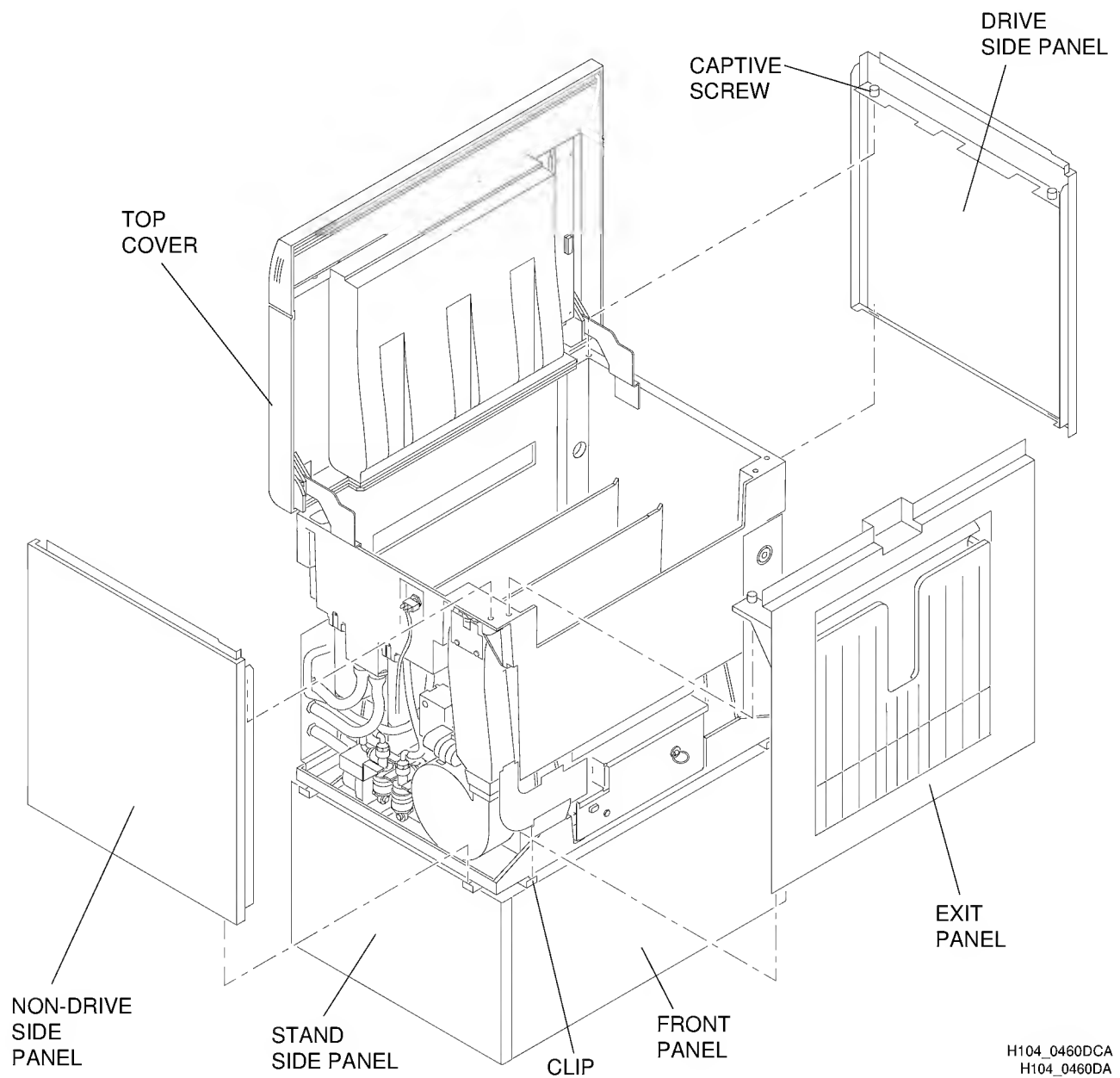
Processor Overview

Identifying and Removing the Covers and Panels

Before you do most of the procedures in this service manual, you must remove certain PANELS or COVERS from the PROCESSOR. To remove the FEED END PANEL, see page 6-3.

To remove the DRIVE SIDE PANEL, the NON-DRIVE SIDE PANEL, or the EXIT PANEL:

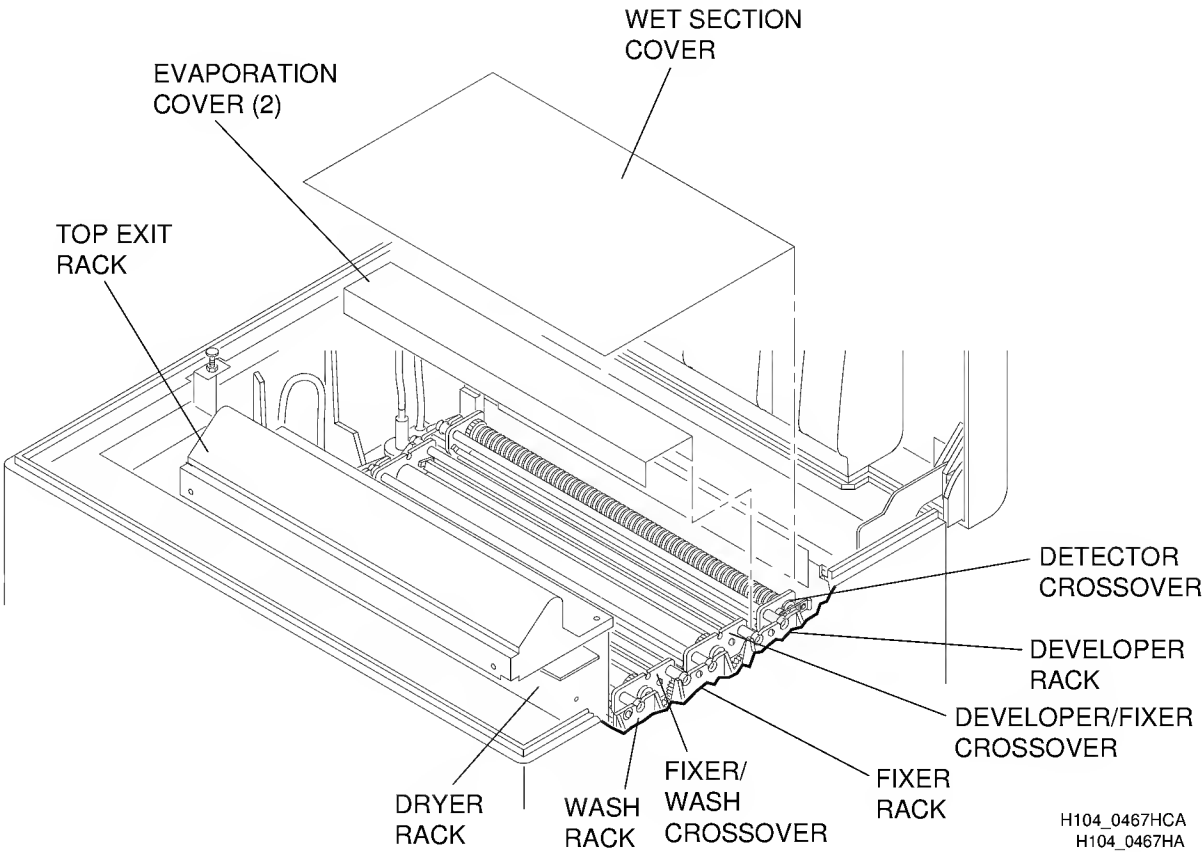
- [1] Lift the TOP COVER.
- [2] Loosen the 2 CAPTIVE SCREWS on the PANEL to be removed.
- [3] Lift the PANEL to release it from the 2 CLIPS under the PANEL.



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Identifying and Removing the Covers and Panels

Identifying the Racks and Crossovers



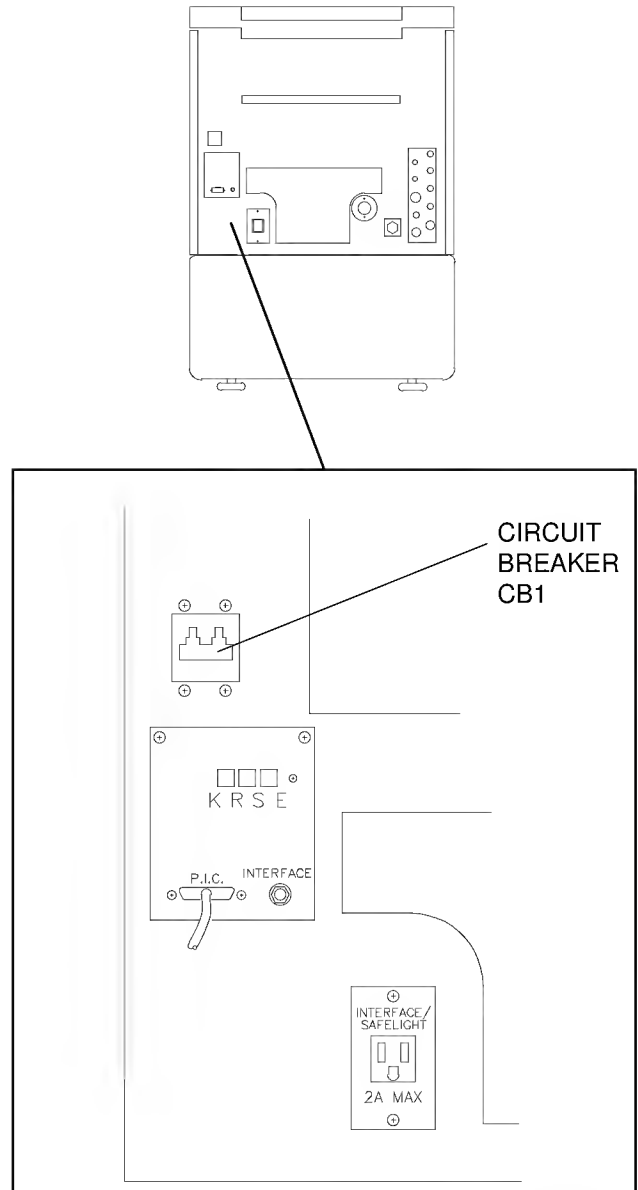
Identifying the Racks and Crossovers

Service Overview

Deenergizing and Energizing the Processor

For most of the service procedures, the PROCESSOR must be deenergized. To **deenergize** the PROCESSOR, move the CIRCUIT BREAKER CB1 on the PROCESSOR to the “O” position and the main wall CIRCUIT BREAKER to “OFF”.

To **energize** the PROCESSOR, move the main wall CIRCUIT BREAKER to “ON” and the CIRCUIT BREAKER CB1 on the PROCESSOR to the “I” position.



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Deenergizing and Energizing the Processor

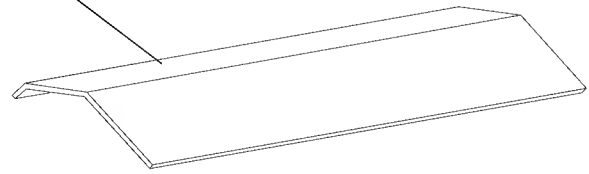
Removing the Racks with Solutions in the Tanks

NOTE

To install the RACKS, see page 1-7.

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - WET SECTION COVER
 - EVAPORATION COVERS
 - YOKE, see the figure on page 2-8
 - FIXER/WASH CROSSOVER
 - DEVELOPER/FIXER CROSSOVER
 - DETECTOR CROSSOVER

SPLASH
GUARD



DRIP
TRAY

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[4] To remove the DEVELOPER RACK:

- (a) Lift the DEVELOPER RACK slowly out of the PROCESSOR. Tilt the DEVELOPER RACK to drain the developer into the developer TANK.
- (b) Hold a DRIP TRAY under the DEVELOPER RACK.

[5] To remove the FIXER RACK:



Do not allow fixer to contaminate the developer solution.

- Use DRIP TRAYS.
 - If removing both the FIXER RACK and the DEVELOPER RACK, remove the DEVELOPER RACK first.
 - When removing the FIXER RACK, place the SPLASH GUARD between the developer and fixer TANKS. Lift the FIXER RACK slowly and drain it before moving it to the work station.
- (a) Place the SPLASH GUARD between the developer and fixer TANKS.

- (b) Lift the FIXER RACK slowly out of the PROCESSOR. Tilt the FIXER RACK to drain the fixer into the fixer TANK.
- (c) Hold a DRIP TRAY under the FIXER RACK.

[6] To remove the WASH RACK:

- (a) Disconnect the WATER DISCONNECT from the non-drive side of the WASH RACK. See the figure on page 2-8.
- (b) Lift the WASH RACK from the WASH TANK.

[7] To remove the TOP EXIT RACK:

- (a) Rotate the TOP EXIT RACK a small distance.
- (b) Slowly and carefully lift the TOP EXIT RACK from the PROCESSOR.

[8] To remove the DRYER RACK:

- (a) If the PROCESSOR has a TOP EXIT RACK, remove it. See Step [7].
- (b) Lift the DRYER RACK straight up from the PROCESSOR.

[9] To install the RACKS:

CAUTION

To prevent contamination of the developer when installing the DEVELOPER RACK and the FIXER RACK,

- Use the SPLASH GUARD.
- Install the FIXER RACK first.
- (a) Place the SPLASH GUARD between the developer and fixer TANKS.
- (b) **Slowly** install the FIXER RACK in the fixer TANK.
- (c) Remove the SPLASH GUARD.
- (d) Slowly install the DEVELOPER RACK.
- (e) Install:
 - WASH RACK
 - DETECTOR CROSSOVER
 - FIXER/WASH CROSSOVER
 - DEVELOPER/FIXER CROSSOVER
 - DRYER RACK

- (f) If the PROCESSOR has a TOP EXIT RACK, install the TOP EXIT RACK.

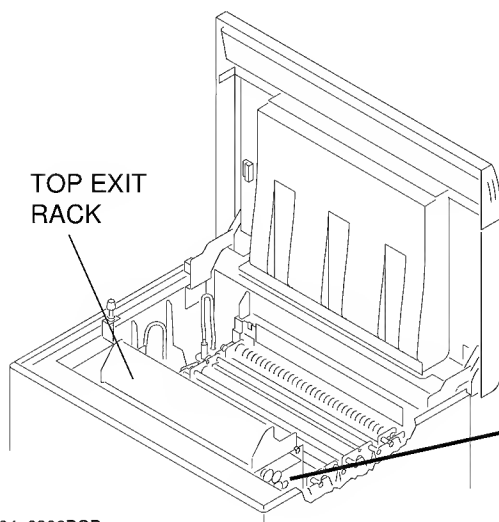
IMPORTANT

The 4 LOCKING TABS must engage.

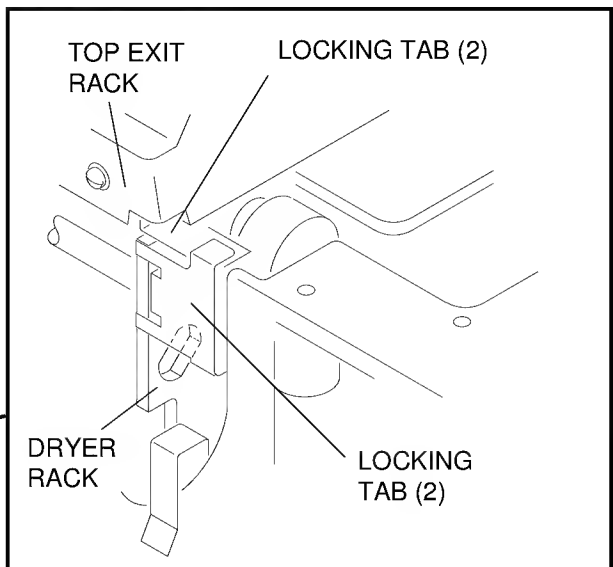
Check that the LOCKING TABS on the TOP EXIT engage the LOCKING TABS on the DRYER RACK. See the figure.

- (g) Check that the RACKS and the CROSSOVERS are seated correctly.
- (h) Install:
- YOKE
 - EVAPORATION COVERS
 - WET SECTION COVER
- (i) Connect the WATER DISCONNECT

[10] Close the TOP COVER.



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Engaging the Locking Tabs on the Top Exit Rack and the Dryer Rack

Draining the Tanks

- [1] Deenergize the PROCESSOR. See page 1-5.

NOTE

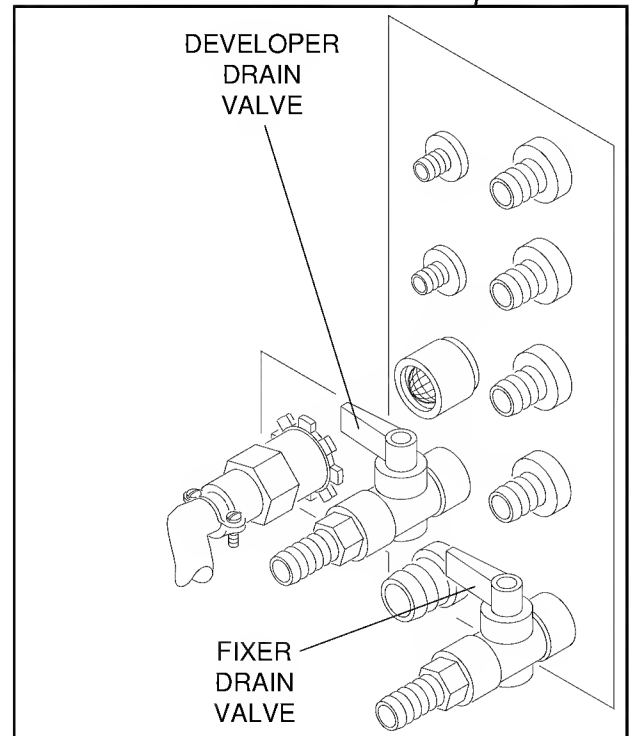
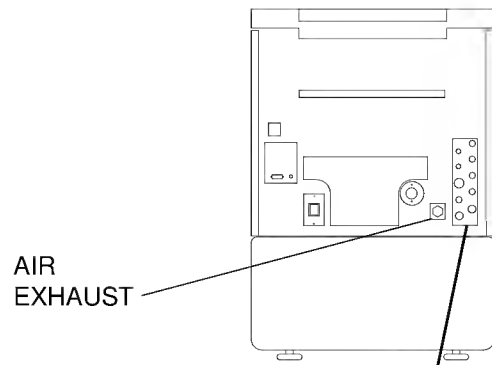
The REPLENISHMENT PUMPS will be deenergized and the flow of developer and fixer from the REPLENISHMENT TANKS will stop when the PROCESSOR is deenergized.

- [2] Open:

- FIXER DRAIN VALVE
- DEVELOPER DRAIN VALVE

WARNING

- Drains must be made of chemically resistant, non-corrosive material. Use PVC or the equivalent.
- The drain must have a minimum diameter of 7.6 cm (3 in.) and be free of obstruction.
- Drain service must comply with all local codes.



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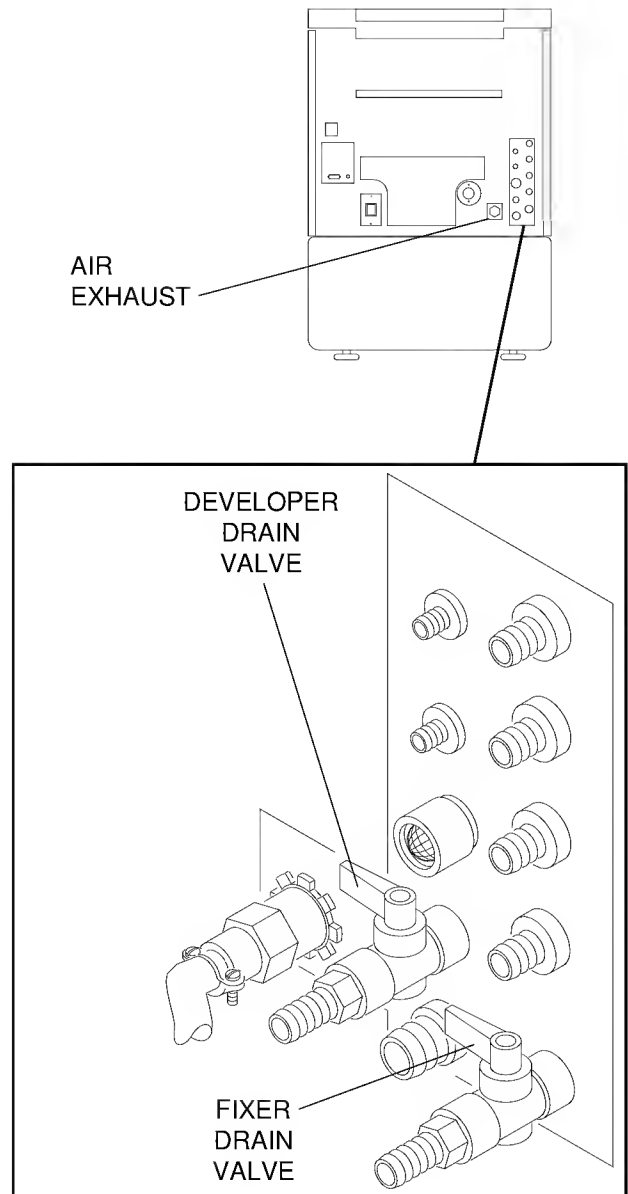
Draining the Processing Tanks

Filling the Tanks

- [1] To fill the processing TANKS, close:
 - FIXER DRAIN VALVE
 - DEVELOPER DRAIN VALVE
 - TOP COVER
- [2] Energize the PROCESSOR.
- [3] On the DISPLAY PANEL on top of the PROCESSOR, press:
 - **“GO TO SETUP”** key
 - 4-digit access code, **4213**
 - **“OPTIONS”** key
 - **“REPLEN MODE”** key
 - **“TANK FILL”** key

NOTE

See the Operator Manual, Publication Part No. 636716, for more details on draining and filling the processing TANKS.



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Filling the Processing Tanks

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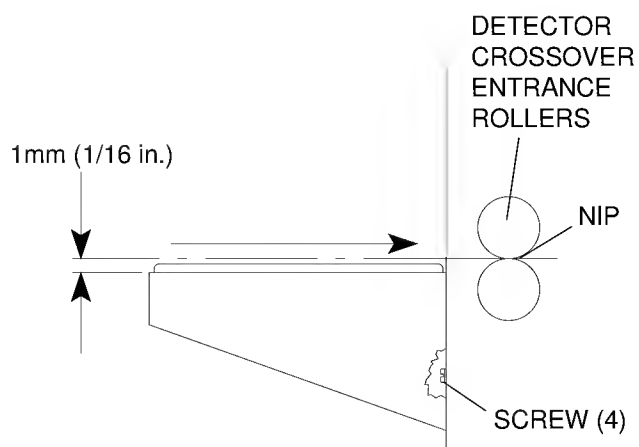
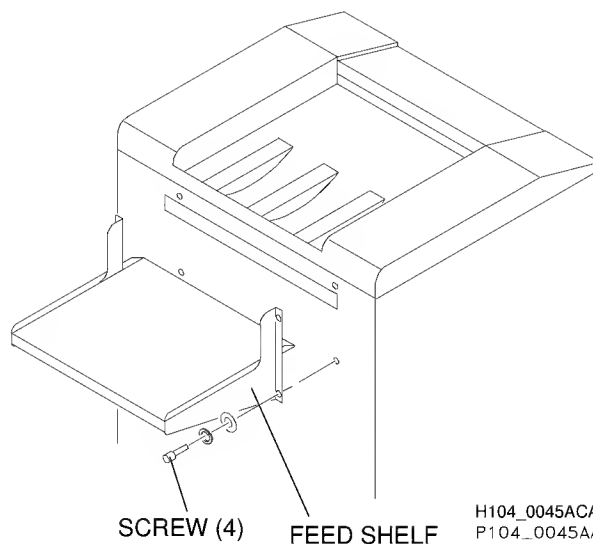
Roller Transport

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Adjusting the Feed Shelf

- [1] Loosen the 4 SCREWS.
- [2] Adjust the position of the FEED SHELF to approximately 1 mm (1/16 in.) below the NIP of the DETECTOR CROSSOVER ENTRANCE ROLLERS.
- [3] Tighten the 4 SCREWS.



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Adjustment of the Feed Shelf

Adjusting the Squareness of the Crossovers

NOTE

Use this adjustment procedure to adjust the squareness of any of the 3 CROSSOVERS:

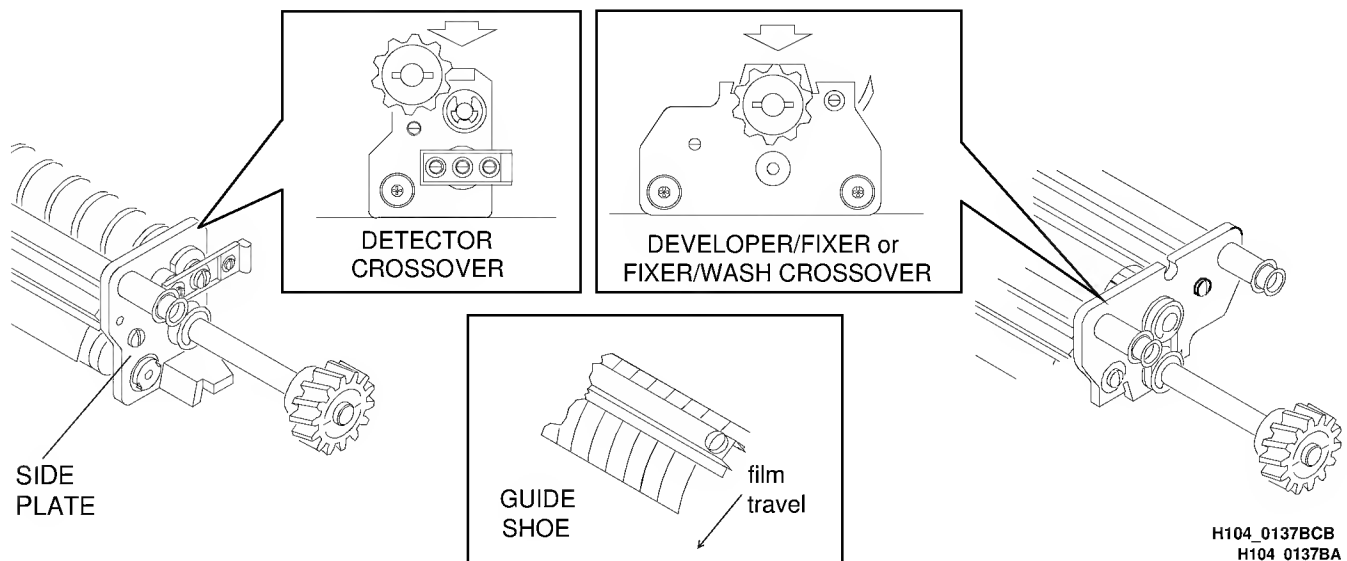
- DETECTOR CROSSOVER
- DEVELOPER/FIXER CROSSOVER
- FIXER/WASH CROSSOVER

- [1] Remove the CROSSOVER.
- [2] Place the CROSSOVER on a smooth, flat surface.
- [3] Check that the SIDE PLATES of the CROSSOVER touch the flat surface evenly. If not, apply pressure to the assembly.

NOTE

The GUIDE SHOES are not adjustable.

- [4] Check that the longer edges of the GUIDE SHOES are pointed in the direction of film travel.



Checking the Crossover for Squareness

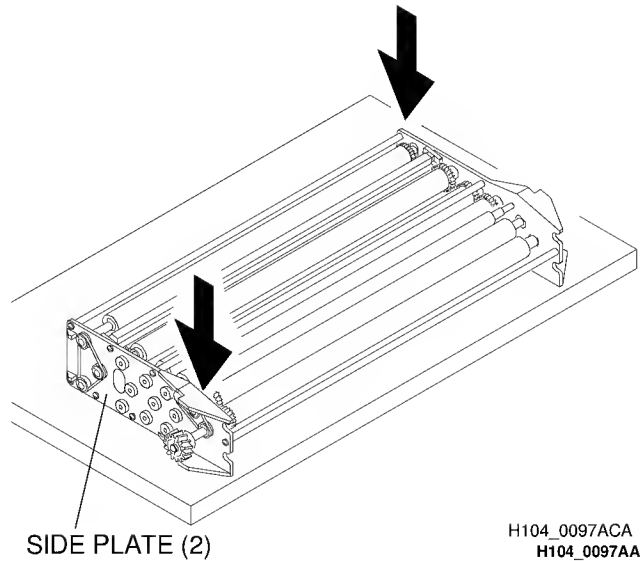
Adjusting the Squareness of the Developer, Fixer, and Wash Racks

- [1] Place the entrance side of the RACK on a smooth, flat surface.
- [2] Check that the SIDE PLATES are flat on the flat surface.
- [3] If necessary, apply pressure to the SIDE PLATES. See the figures.

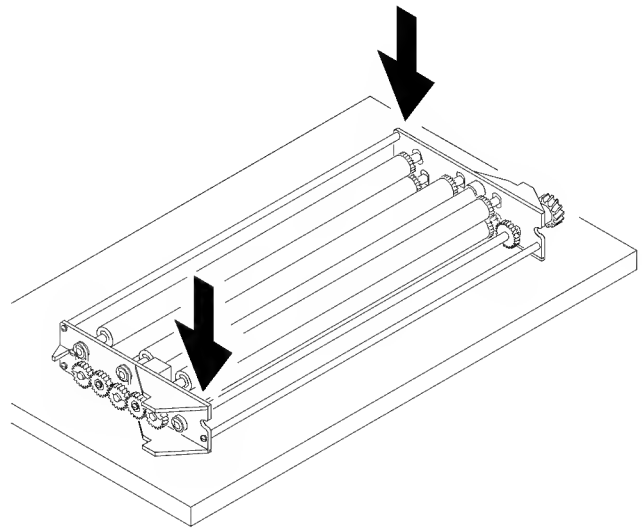
NOTE

The GUIDE SHOES of the DEVELOPER RACK are not adjustable.

- [4] Check that the longer edges of the GUIDE SHOES are pointed in the direction of film travel.



Developer or Fixer Rack



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Wash Rack

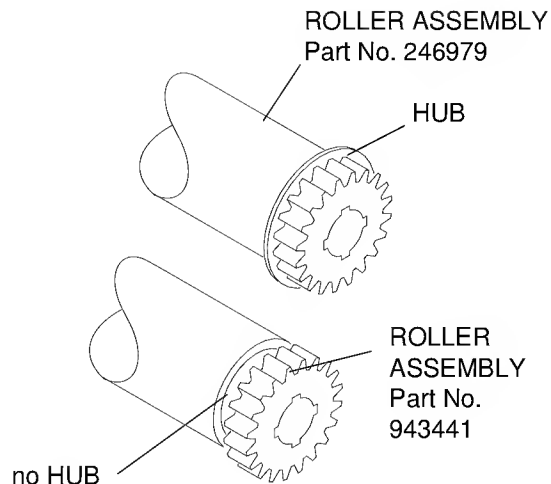
Replacement of the D Roller Assemblies in the Wash Rack of Early Processors

Description: WASH RACKS in current PROCESSORS have new D ROLLER ASSEMBLIES. Use this procedure to install these new style D ROLLER ASSEMBLIES in early PROCESSORS. The GEAR in the new assemblies has a HUB that interlocks with the GEARS on B and C ROLLER ASSEMBLIES. See the figure. This change was not a Modification Kit.

The Part Number of the new style D ROLLER ASSEMBLY is **246979**.

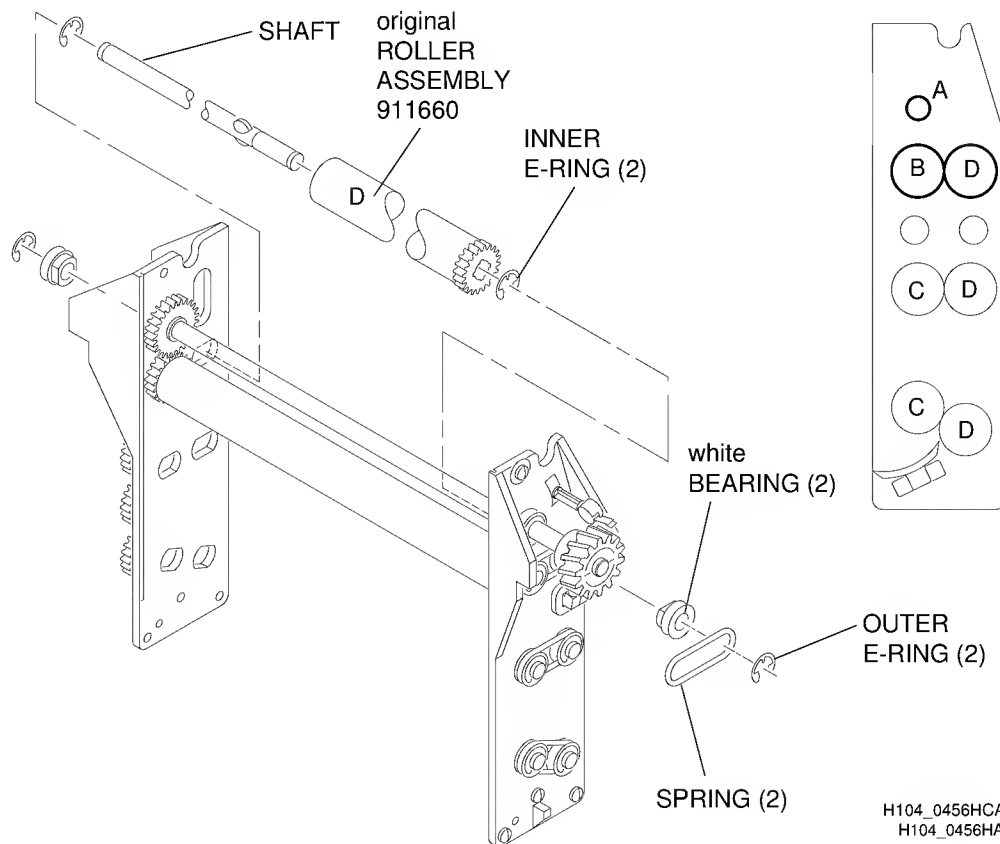
NOTE

- The new style D ROLLER ASSEMBLIES have no INNER E-RINGS.
- B and C ROLLER ASSEMBLIES, Part No. 911660, have not changed.



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The Difference Between the New and the Original D Roller Assemblies



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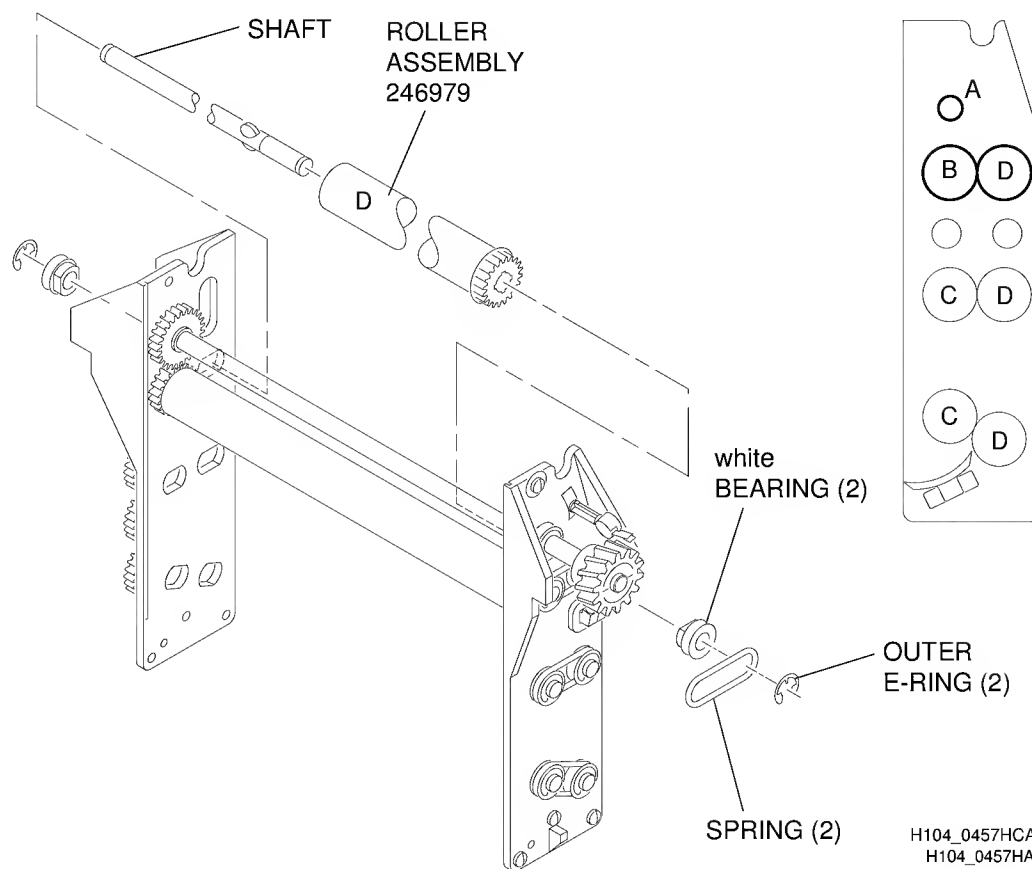
The Original D Roller Assemblies in Early Processors

- [1] Remove the WASH RACK from the PROCESSOR.
- [2] For each existing original D ROLLER ASSEMBLY, remove:
- 2 OUTER E-RINGS and keep
 - 2 SPRINGS and keep
 - 2 white BEARINGS and keep
 - 2 INNER E-RINGS and discard
 - existing ROLLER ASSEMBLY 911660 from the SHAFT and discard

- [3] For each new D ROLLER ASSEMBLY, install:
- new style D ROLLER ASSEMBLY 246979 on the existing SHAFT
 - 2 white BEARINGS
 - 2 SPRINGS
 - 2 OUTER E-RINGS

IMPORTANT

Do not install the INNER E-RINGS on the new style D ROLLER ASSEMBLIES.



Installing New Style D Roller Assemblies in the Wash Rack

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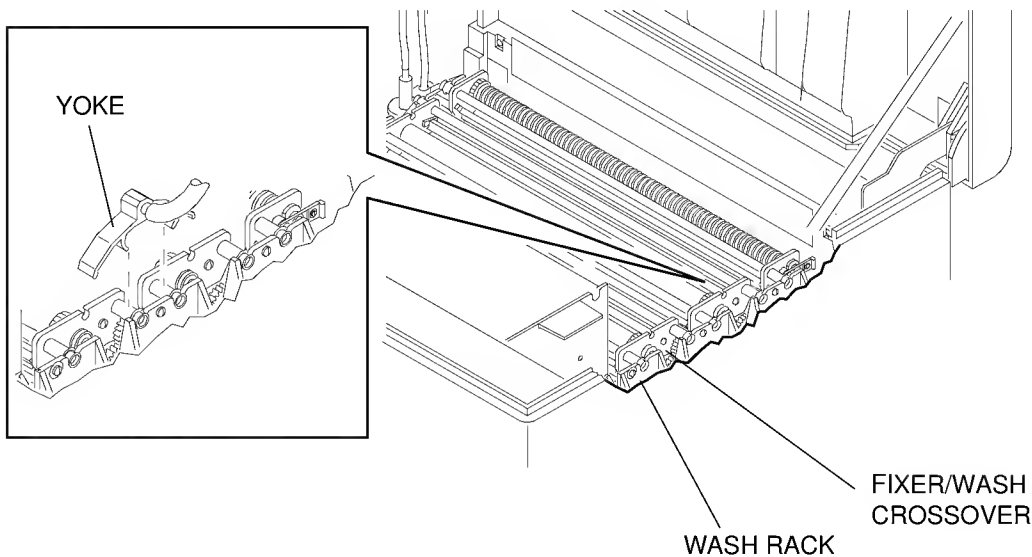
Cleaning the Spray Bars in the Wash Rack

NOTE

- The holes in the SPRAY BARS in the WASH RACKS can become clogged from the minerals in the water supply. For correct operation of the WASH RACK, clean the SPRAY BARS periodically. The characteristics of the water supply determine the frequency of cleaning.
- PROCESSORS with Mod 17 installed do not have SPRAY BARS.

- [2] Lift the TOP COVER.
- [3] Remove the WET SECTION COVER and the EVAPORATION COVERS.
- [4] Disconnect the WATER DISCONNECT on the non-drive side of the WASH RACK.
- [5] Lift the YOKE from the FIXER/WASH CROSSOVER.
- [6] Remove the FIXER/WASH CROSSOVER.
- [7] Lift the WASH RACK **slowly** from the PROCESSOR.
- [8] Set the WASH RACK on a table.

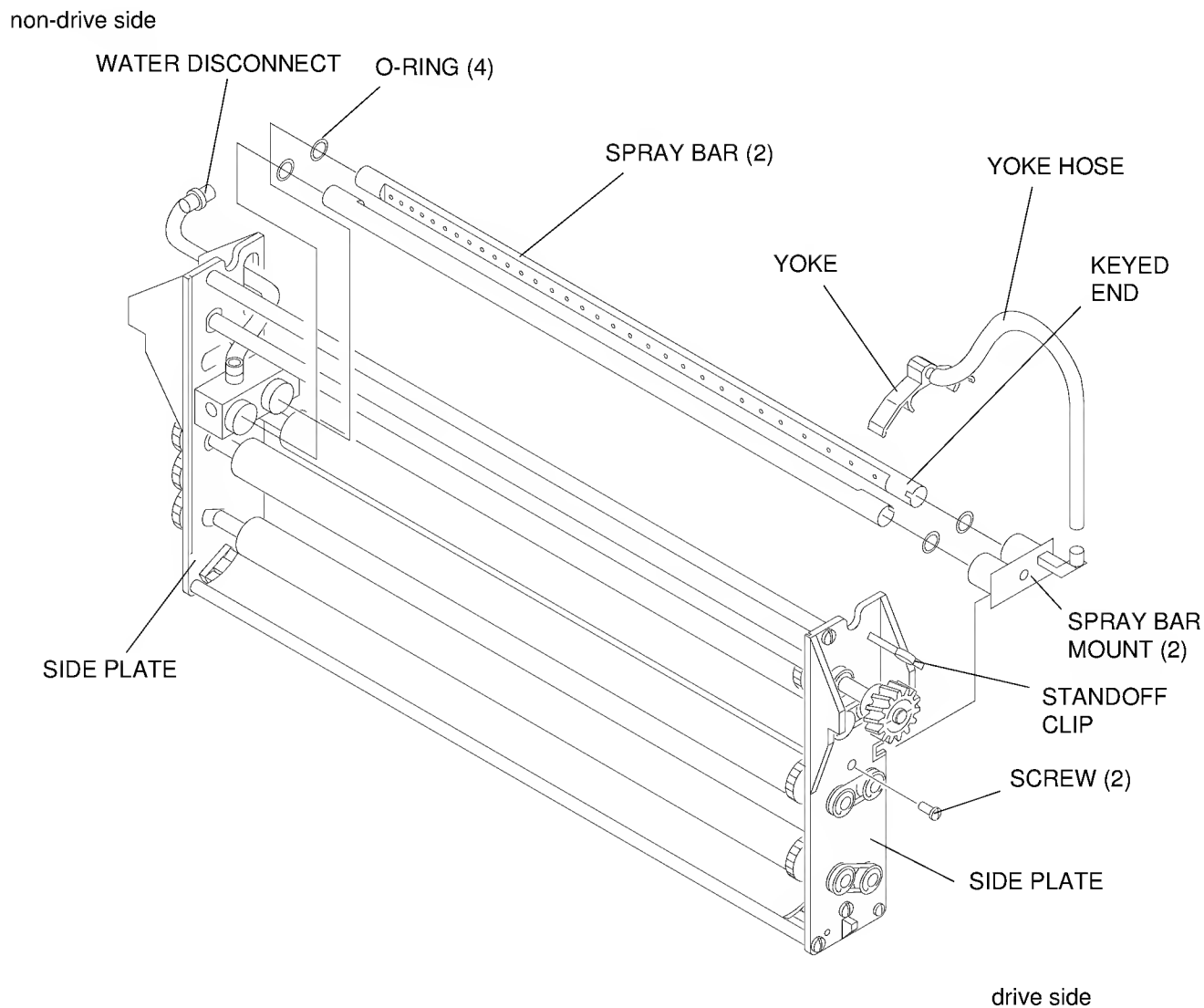
- [1] Deenergize the PROCESSOR. See page 1-5.



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Removing the Wash Rack from the Processor

- [9] Remove the YOKE HOSE from the STANDOFF CLIP.
- [10] Remove the 2 SCREWS that hold the drive side SPRAY BAR MOUNT.
- [11] Remove the drive side SPRAY BAR MOUNT from the SIDE PLATE.
- [12] Remove the SPRAY BARS from the SPRAY BAR MOUNTS by **carefully** pulling and rotating them.



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Removing the Spray Bars from the Wash Rack

- [13] To clean the insides of the SPRAY BARS, use SPECIAL TOOL TL-4460 and:
- water or
 - a mild solution of water and vinegar or
 - Kodak FIXER/WASH SYSTEM CLEANER

CAUTION

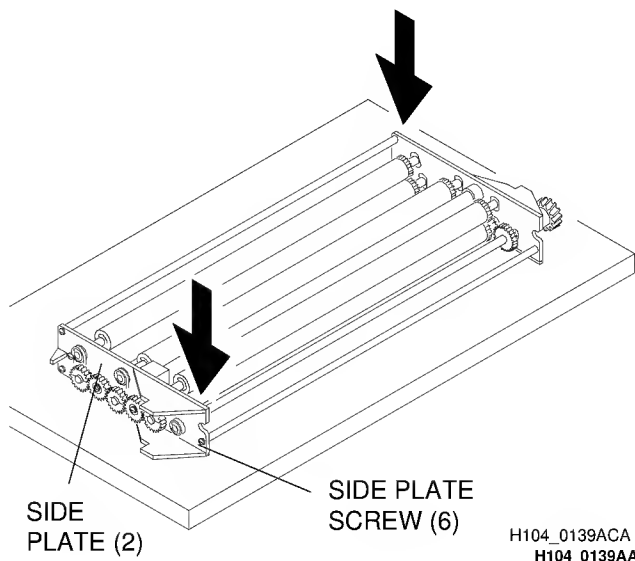
- Do not make the holes in the SPRAY BARS larger when inserting objects. If using a drill bit, **manually** insert the non-cutting end into the holes.
 - If using Kodak SYSTEM CLEANER, **see the directions and cautions** packed with the SYSTEM CLEANER. Rinse the SPRAY BARS thoroughly.
- [14] If necessary, manually insert a small object, such as the non-cutting end of a small drill bit, into each of the holes in the SPRAY BARS to clean the holes.
- [15] Rinse the SPRAY BARS.
- [16] Check that the O-RINGS are correctly seated in the SPRAY BAR MOUNTS.

CAUTION

The SPRAY BARS must be fully seated in the SPRAY BAR MOUNTS to install the SPRAY BAR MOUNTS in the WASH RACK. Immersing the SPRAY BARS and the SPRAY BAR MOUNTS in water makes installation easier.

- [17] Insert the KEYED ENDS of the 2 SPRAY BARS into the drive side SPRAY BAR MOUNT.
- [18] Rotate the SPRAY BARS until the KEYED ENDS are seated fully in the SPRAY BAR MOUNT.

- [19] Install the other ends of the 2 SPRAY BARS in the non-drive side SPRAY BAR MOUNT.
- [20] Install the drive side SPRAY BAR MOUNT in the WASH RACK.
- [21] Install the 2 SCREWS that hold the SPRAY BAR MOUNT.
- [22] Check the squareness of the WASH RACK. See the figure below or page 2-4.
- [23] Connect the YOKE HOSE to the STANDOFF CLIP.
- [24] Return the WASH RACK **slowly and carefully** into position in the PROCESSOR.
- [25] Connect the WATER DISCONNECT.
- [26] Install the:
- FIXER/WASH CROSSOVER
 - YOKE
 - EVAPORATION COVER
 - WET SECTION COVER
- [27] Check that the PROCESSOR operates correctly.



Checking the Squareness of the Wash Rack

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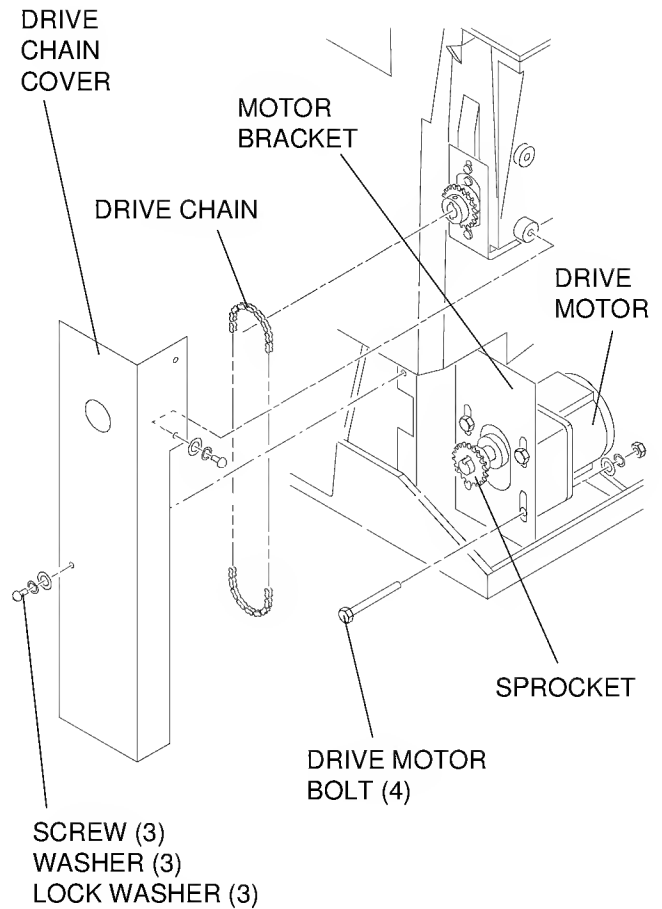
Main Drive

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Removing the Drive Shaft and the Worm Gears

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - DRIVE SIDE PANEL
 - EXIT PANEL
 - WET SECTION COVER
 - 2 EVAPORATION COVERS
 - CROSSOVERS
 - RACKS
 - DRIVE CHAIN COVER
- [4] Loosen the 4 DRIVE MOTOR BOLTS from the MOTOR BRACKET.
- [5] Lift the DRIVE MOTOR and remove the DRIVE CHAIN.



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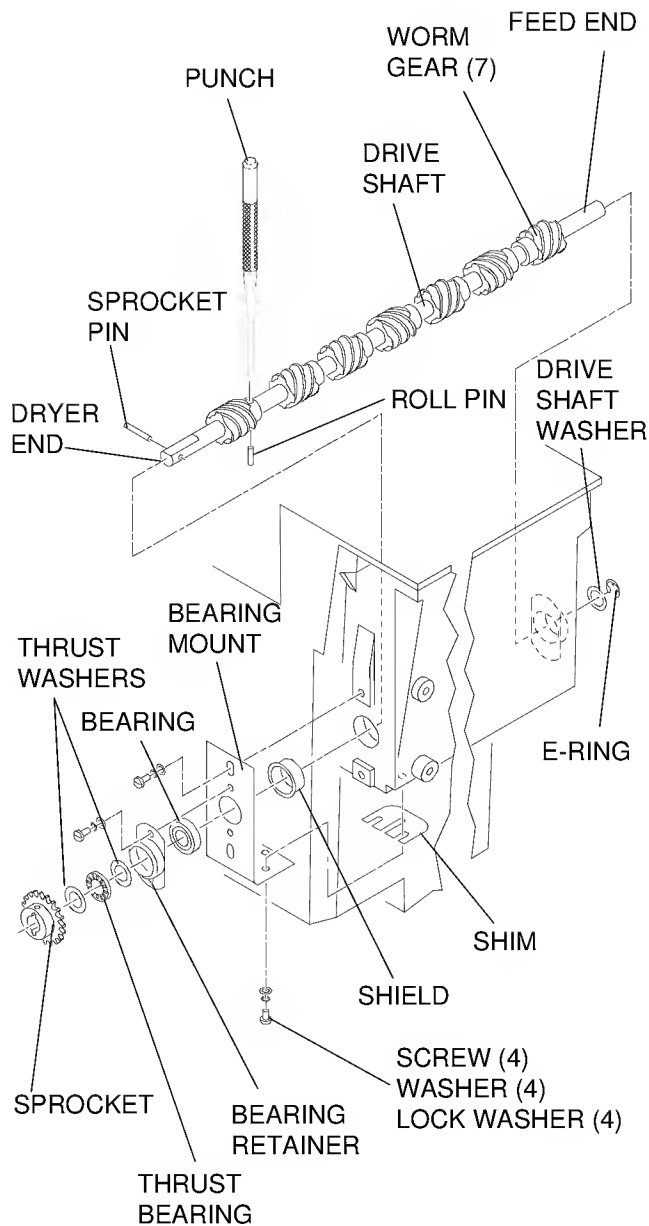
Removing the Drive Motor Bolts

- [6] Remove from the FEED END of the DRIVE SHAFT:
- E-RING
 - DRIVE SHAFT WASHER
- [7] For access to the SPROCKET PIN, move the DRIVE SHAFT toward the DRYER END of the PROCESSOR.
- [8] Remove from the DRYER END of the DRIVE SHAFT the:
- SPROCKET PIN
 - SPROCKET
 - 2 THRUST WASHERS
 - THRUST BEARING
 - BEARING RETAINER
 - BEARING

WARNING

To prevent damage to the SCREWS, loosen **all** 4 SCREWS before removing the 4 SCREWS from the BEARING MOUNT.

- [9] **Loosen** the 4 SCREWS that hold the BEARING MOUNT.
- [10] Remove:
- 4 SCREWS
 - 4 LOCK WASHERS
 - 4 WASHERS
 - BEARING MOUNT
 - any SHIM
 - SHIELD



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Removing the Drive Shaft and the Worm Gears

IMPORTANT

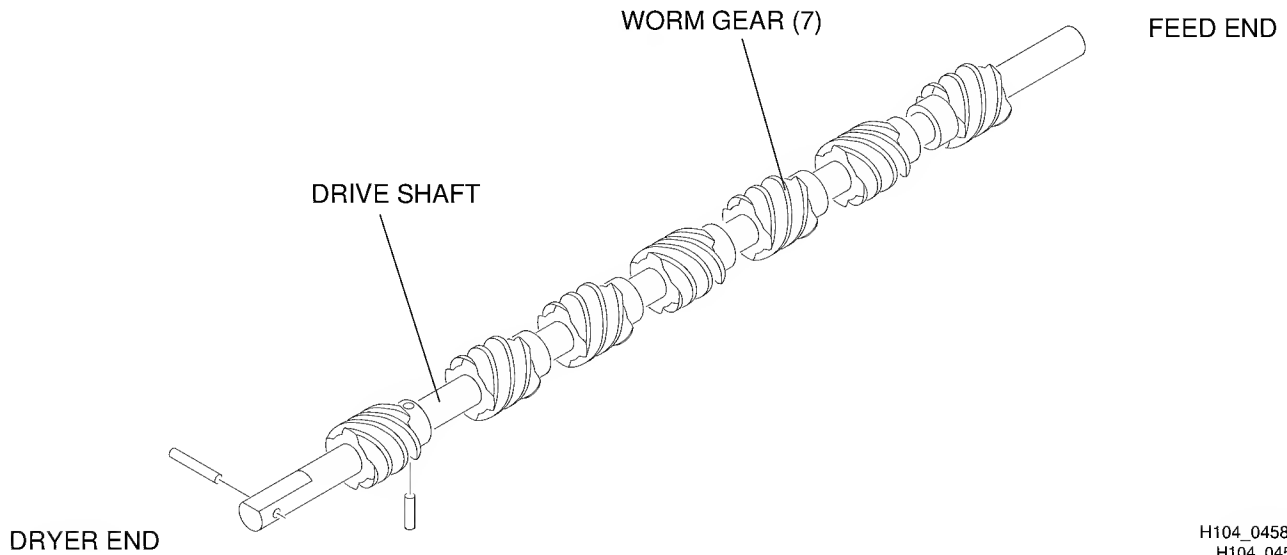
Observe the quantity of SHIMS removed. When assembling the DRIVE SHAFT, install the same quantity of SHIMS. See page 3-4.

- [11] Remove the DRIVE SHAFT by slowly pulling it toward the DRYER END of the PROCESSOR.
- [12] If necessary, remove any WORM GEARS that have wear from the DRIVE SHAFT. Use a PUNCH to remove the ROLL PIN from the WORM GEAR.

IMPORTANT

- Check the direction of the WORM GEARS. See the figure below for correct installation on the DRIVE SHAFT.
- When installing the DRIVE SHAFT, install a quantity of DRIVE SHAFT WASHERS until the DRIVE SHAFT has minimum play from side to side.

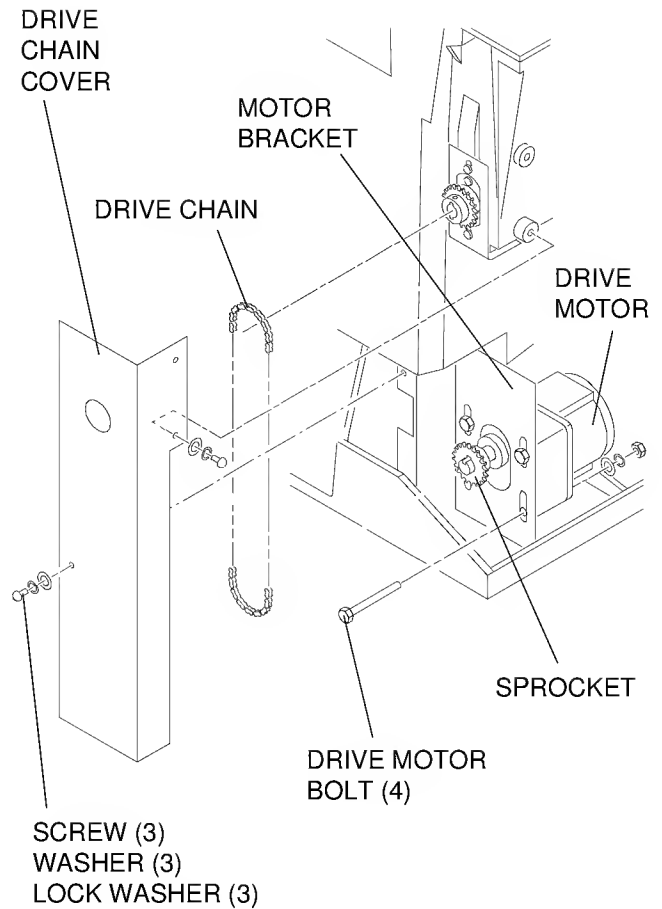
- [13] Reverse the above procedure to install new WORM GEARS and a new DRIVE SHAFT. Install the same quantity of SHIMS that you removed in Step [10].
- [14] Adjust the tension on the DRIVE CHAIN. See page 3-5.



Checking the Direction of the Worm Gears

Adjusting the Tension on the Drive Chain

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - DRIVE SIDE PANEL
 - EXIT PANEL
 - DRIVE CHAIN COVER
- [4] Loosen the 4 DRIVE MOTOR BOLTS from the MOTOR BRACKET.
- [5] Press down on the DRIVE MOTOR to tighten the DRIVE CHAIN. Allow **5 mm (1/4 in.) deflection** of the DRIVE CHAIN at the center of the DRIVE CHAIN.
- [6] Tighten the 4 DRIVE MOTOR BOLTS.
- [7] Install the:
 - DRIVE CHAIN COVER
 - EXIT PANEL
 - DRIVE SIDE PANEL

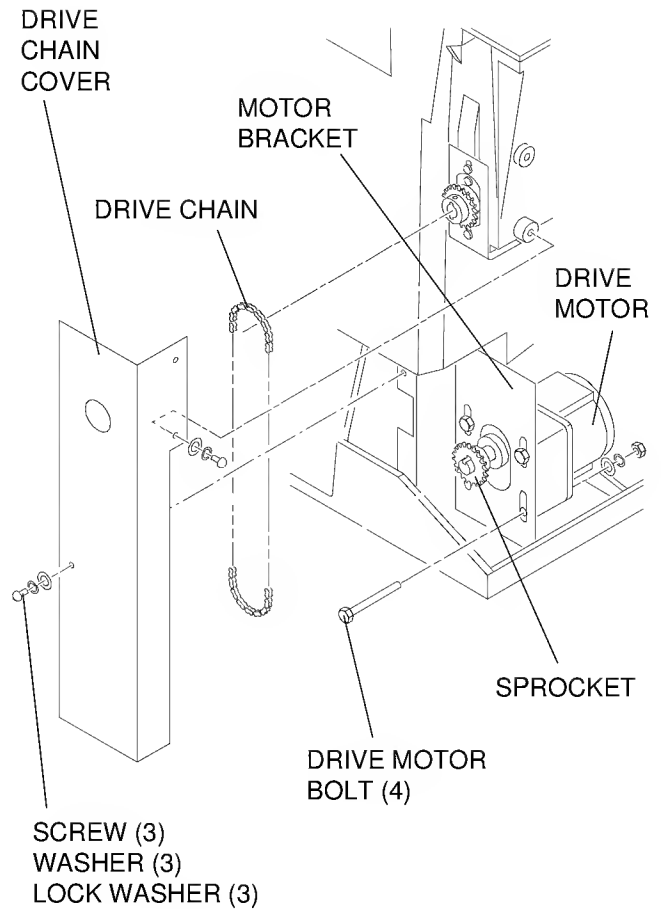


H104_0147CCB
H104_0147CA

Adjusting the Tension on the Drive Chain

Removing the Drive Chain

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - DRIVE SIDE PANEL
 - EXIT PANEL
 - DRIVE CHAIN COVER
- [4] Loosen the 4 DRIVE MOTOR BOLTS from the MOTOR BRACKET.
- [5] Lift the DRIVE MOTOR and remove the DRIVE CHAIN.
- [6] Reverse the above procedure to install the DRIVE CHAIN.
- [7] Adjust the tension on the DRIVE CHAIN. See page 3-5.

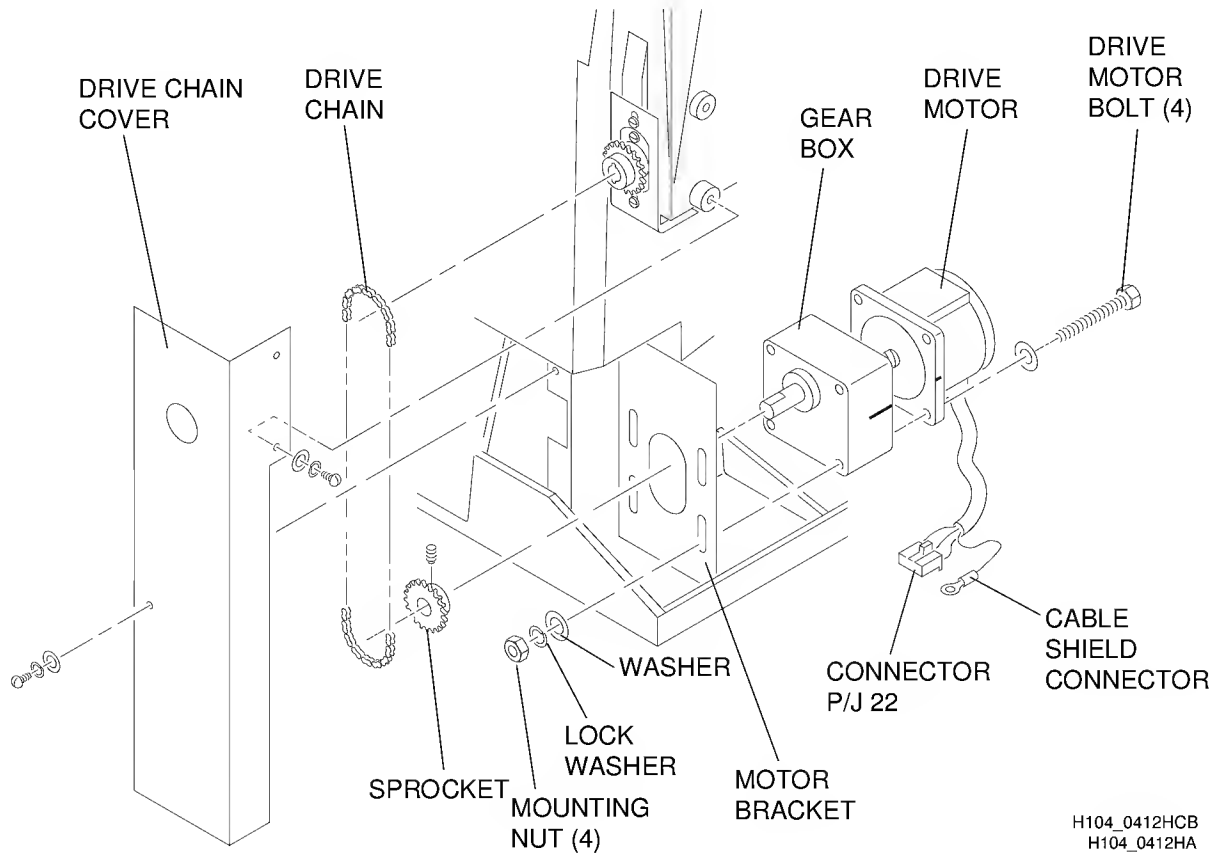


H104_0147CCB
H104_0147CA

Replacement of the Drive Chain

Removing the Drive Motor B6 and the Gear Box

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - DRIVE SIDE PANEL
 - EXIT PANEL
 - DRIVE CHAIN COVER
- [4] Loosen the 4 DRIVE MOTOR BOLTS from the MOTOR BRACKET.
- [5] Lift the DRIVE MOTOR and remove the DRIVE CHAIN.
- [6] Remove the SPROCKET from the DRIVE MOTOR.
- [7] Remove the 4 MOUNTING NUTS, LOCK WASHERS, and WASHERS from the DRIVE MOTOR.
- [8] Move the DRIVE MOTOR and the GEAR BOX for access to CONNECTOR P/J 22.
- [9] Disconnect the CONNECTOR P/J 22 and the CABLE SHIELD CONNECTOR.
- [10] Remove the DRIVE MOTOR and the GEAR BOX.
- [11] Reverse the above procedure to install a new DRIVE MOTOR and a new GEAR BOX.
- [12] Adjust the tension on the DRIVE CHAIN. See page 3-5.



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Replacement of the Drive Motor and the Gear Box

Removing the Feed End Bearing from the Drive Shaft

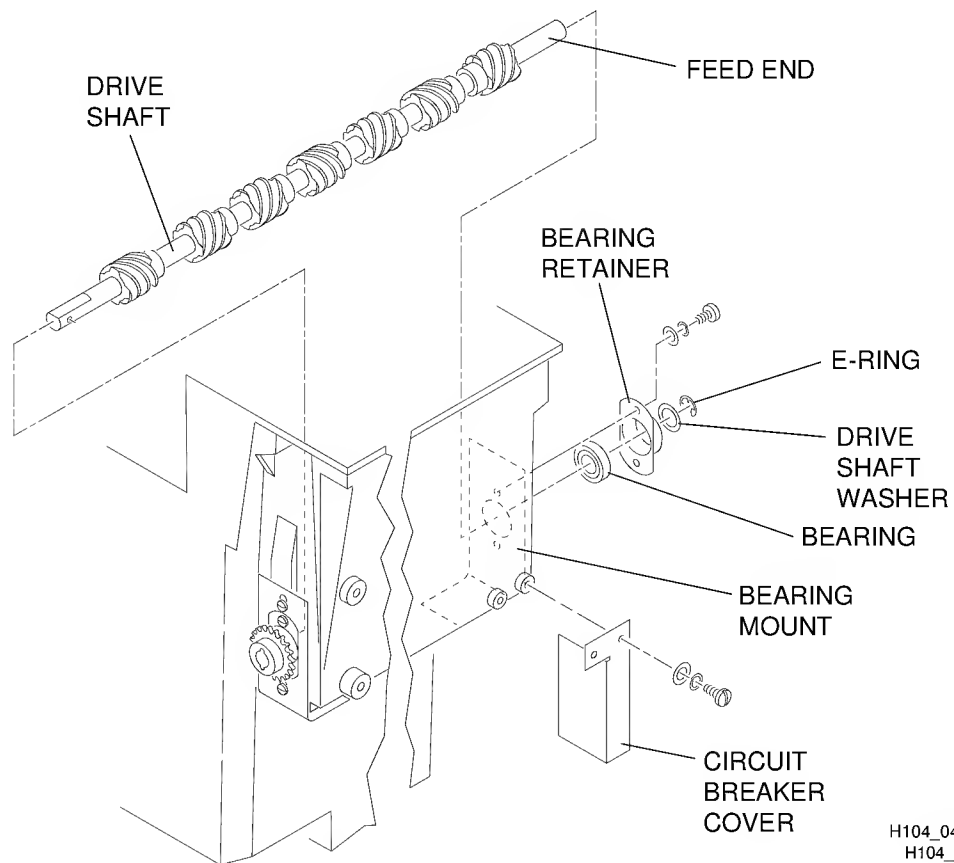
- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the DRIVE SIDE PANEL and the CIRCUIT BREAKER COVER.
- [4] Remove the E-RING and the DRIVE SHAFT WASHER from the DRIVE SHAFT.
- [5] Remove the BEARING RETAINER.
- [6] Remove the BEARING from the FEED END of the DRIVE SHAFT.

- [7] Install a new BEARING.

IMPORTANT

When installing the new BEARING, install a quantity of DRIVE SHAFT WASHERS until the DRIVE SHAFT has minimum play from side to side.

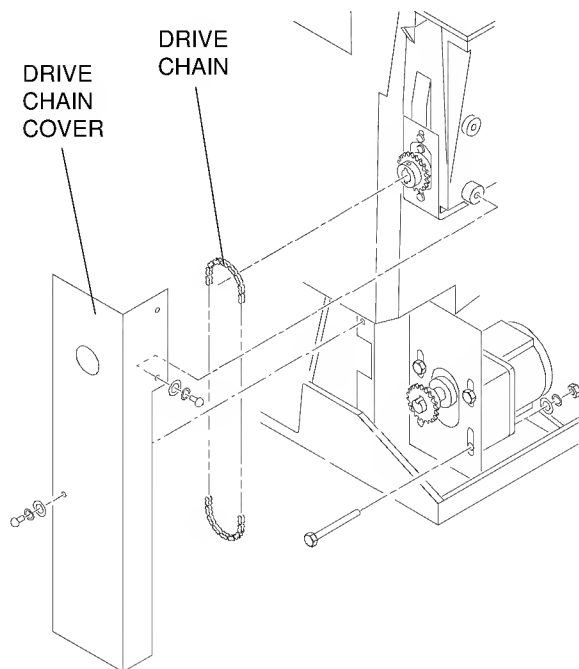
- [8] Reverse the above procedure to assemble the other parts removed.



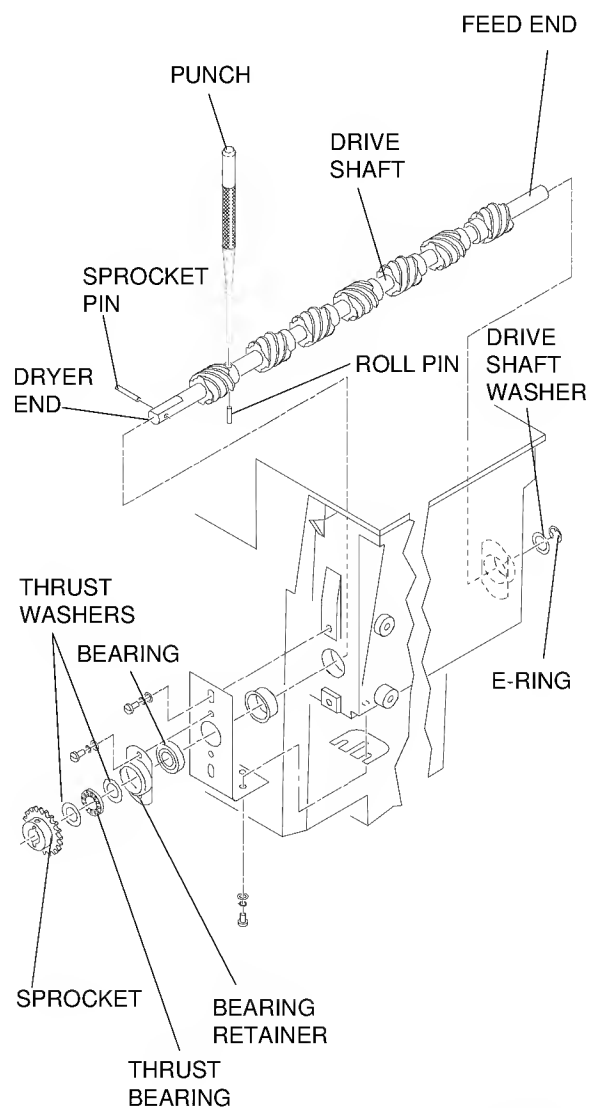
Replacement of the Feed End Bearing on the Drive Shaft

Removing the Dryer End Bearing from the Drive Shaft

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - DRIVE SIDE PANEL
 - EXIT PANEL
 - DRIVE CHAIN COVER
- [4] Remove the E-RING and the DRIVE SHAFT WASHERS from the FEED END of the DRIVE SHAFT.
- [5] For access to the the SPROCKET PIN, move the DRIVE SHAFT toward the DRYER END.
- [6] Remove:
 - SPROCKET PIN
 - DRIVE CHAIN
 - SPROCKET
 - 2 THRUST WASHERS
 - THRUST BEARING
 - BEARING RETAINER
 - BEARING
- [7] Install a new BEARING.
- [8] Reverse the above procedure to assemble the other parts removed.



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Replacement of the Dryer End Bearing on the Drive Shaft

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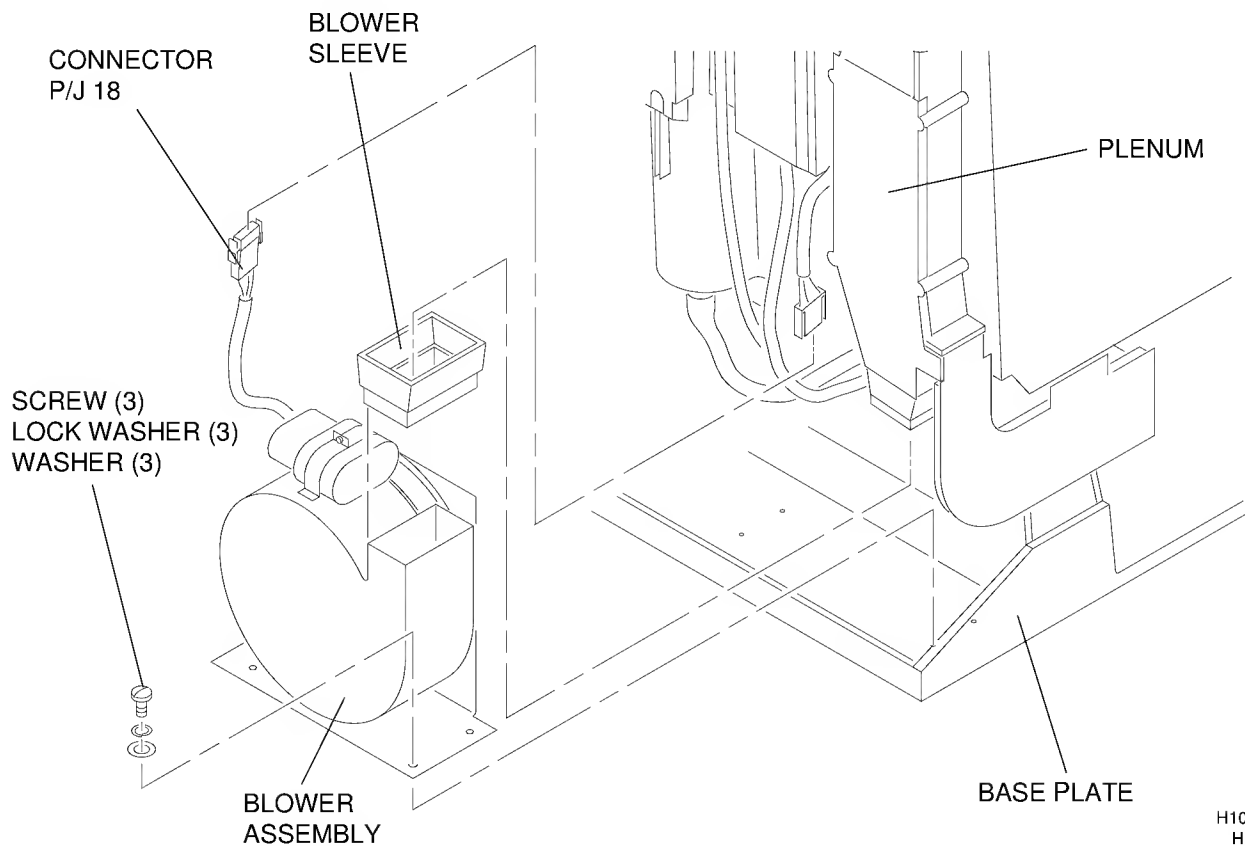
Dryer Assembly

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Removing the Air Flow Switch S3	4-7

Removing the Blower Assembly B1

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - NON-DRIVE SIDE PANEL
 - EXIT PANEL
 - 3 SCREWS, the 3 LOCK WASHERS, and the 3 WASHERS holding the BLOWER ASSEMBLY to the BASE PLATE
 - BLOWER SLEEVE from the PLENUM
- [4] Pull the BLOWER ASSEMBLY toward you and remove it from the PROCESSOR.
- [5] Disconnect the CONNECTOR P/J 18.
- [6] Reverse the above procedure to install the new BLOWER ASSEMBLY and to assemble the other parts removed.



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H104_0409HA

Replacement of the Blower Assembly

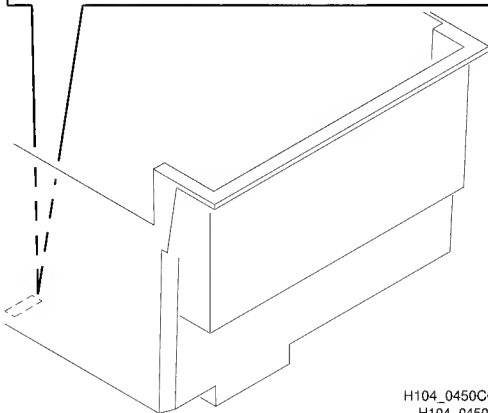
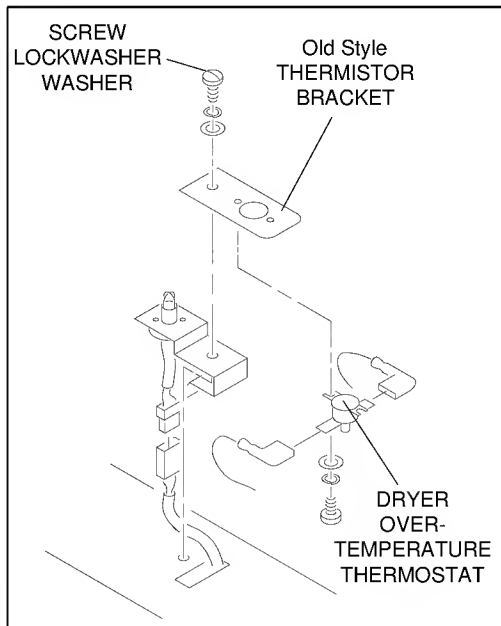
Removing the Dryer Over-Temperature Thermostat

IMPORTANT

The DRYER OVER-TEMPERATURE THERMOSTAT does not automatically reset after an over-temperature condition. To reset the DRYER OVER-TEMPERATURE THERMOSTAT manually, press the RESET BUTTON.

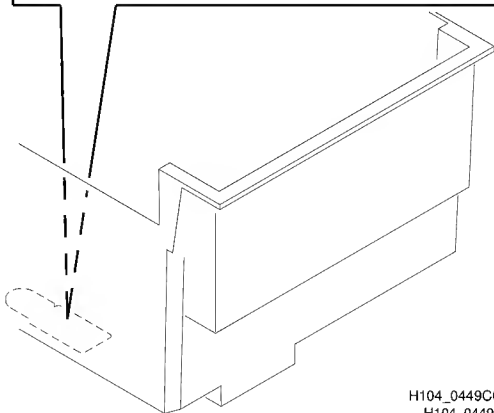
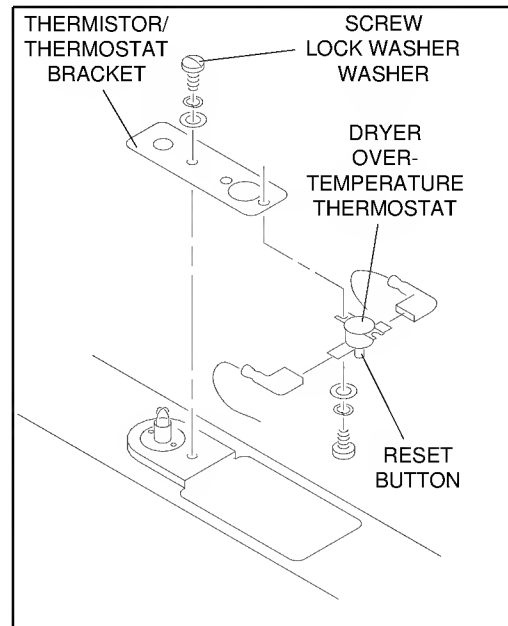
- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the WET SECTION COVER.

- [4] Remove:
 - TOP EXIT RACK
 - DRYER RACK
 - SCREW, LOCK WASHER, and WASHER from the Old Style THERMISTOR BRACKET or from the New Style THERMISTOR/THERMOSTAT BRACKET.
- [5] Disconnect the 2 wires from the DRYER OVER-TEMPERATURE THERMOSTAT.
- [6] Remove the DRYER OVER-TEMPERATURE THERMOSTAT.
- [7] Reverse the procedure to install a new DRYER OVER-TEMPERATURE THERMOSTAT and to assemble the PROCESSOR.



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H104_0450CA

Old Style Thermistor Bracket

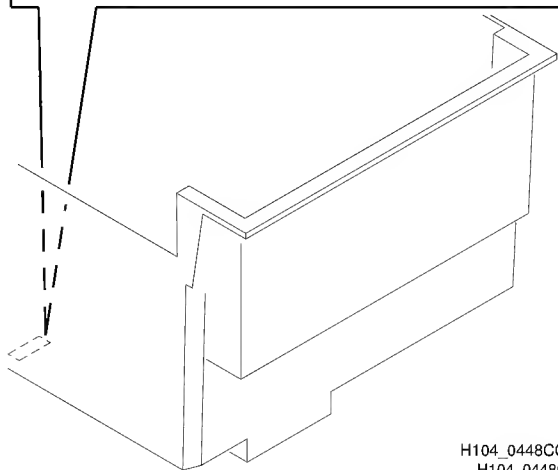
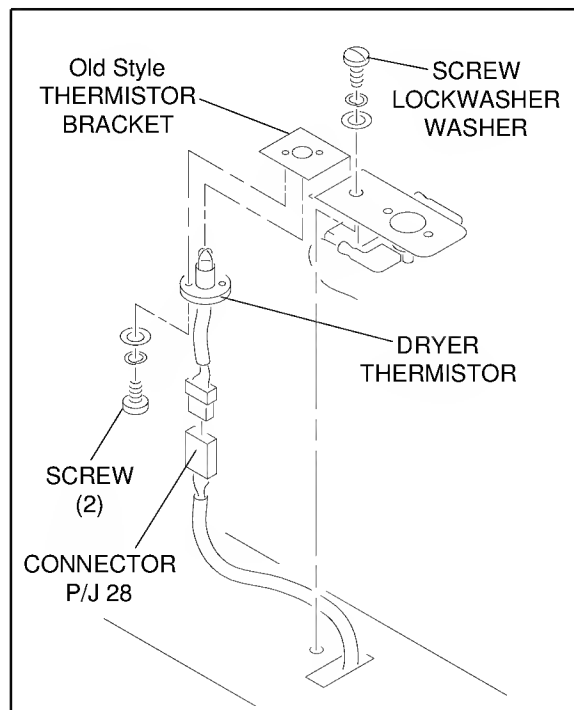


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H104_0449CA

New Style Thermistor/Thermostat Bracket

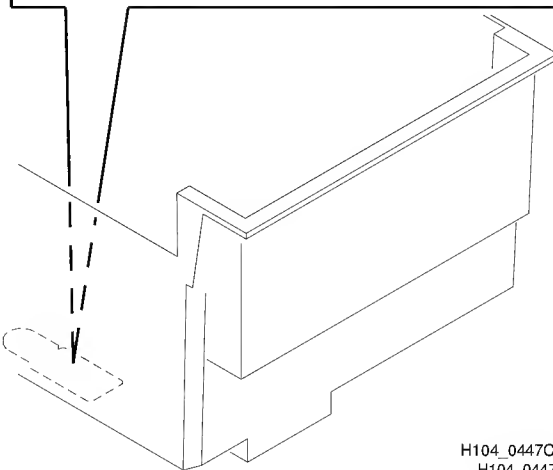
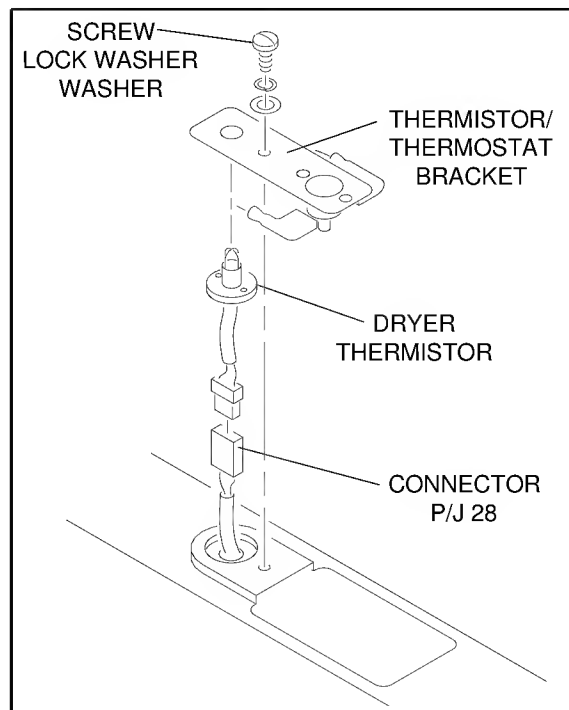
Removing the Dryer Thermistor RT3

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - WET SECTION COVER
 - TOP EXIT RACK
 - DRYER RACK
- [4] Remove the SCREW, the LOCK WASHER, the WASHER, and the Old Style THERMISTOR BRACKET or the New Style THERMISTOR/THERMOSTAT BRACKET.
- [5] Remove the 2 SCREWS from the Old Style DRYER THERMISTOR.
- [6] Disconnect the CONNECTOR P/J 28.
- [7] Remove the DRYER THERMISTOR from the PROCESSOR.
- [8] Reverse the above procedure to install a new DRYER THERMISTOR and to assemble the PROCESSOR.



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Old Style Dryer Thermistor



H104_0447CCA
H104_0447CA

New Style Dryer Thermistor

Removing the Dryer Heater HR3

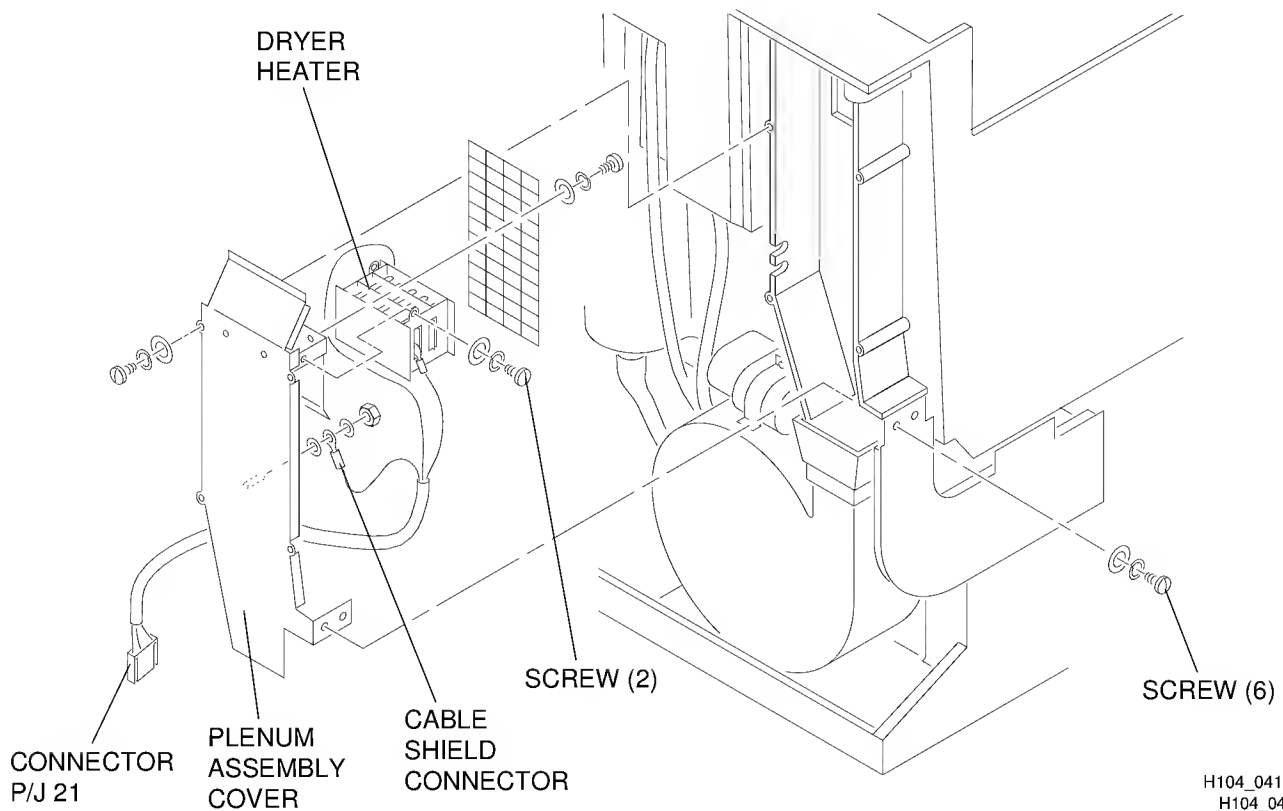
- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the NON-DRIVE SIDE PANEL and the EXIT PANEL

WARNING

The PLENUM ASSEMBLY COVER may be hot. Allow it to cool before you remove the DRYER HEATER.

- [5] Disconnect CONNECTOR P/J 21 from the DRYER HEATER.
- [6] Remove the CABLE SHIELD CONNECTOR from the PLENUM ASSEMBLY COVER.
- [7] Remove the 2 SCREWS holding the DRYER HEATER to the PLENUM ASSEMBLY COVER.
- [8] Remove the DRYER HEATER from the PROCESSOR.

- [4] Remove the 6 SCREWS and the PLENUM ASSEMBLY COVER.

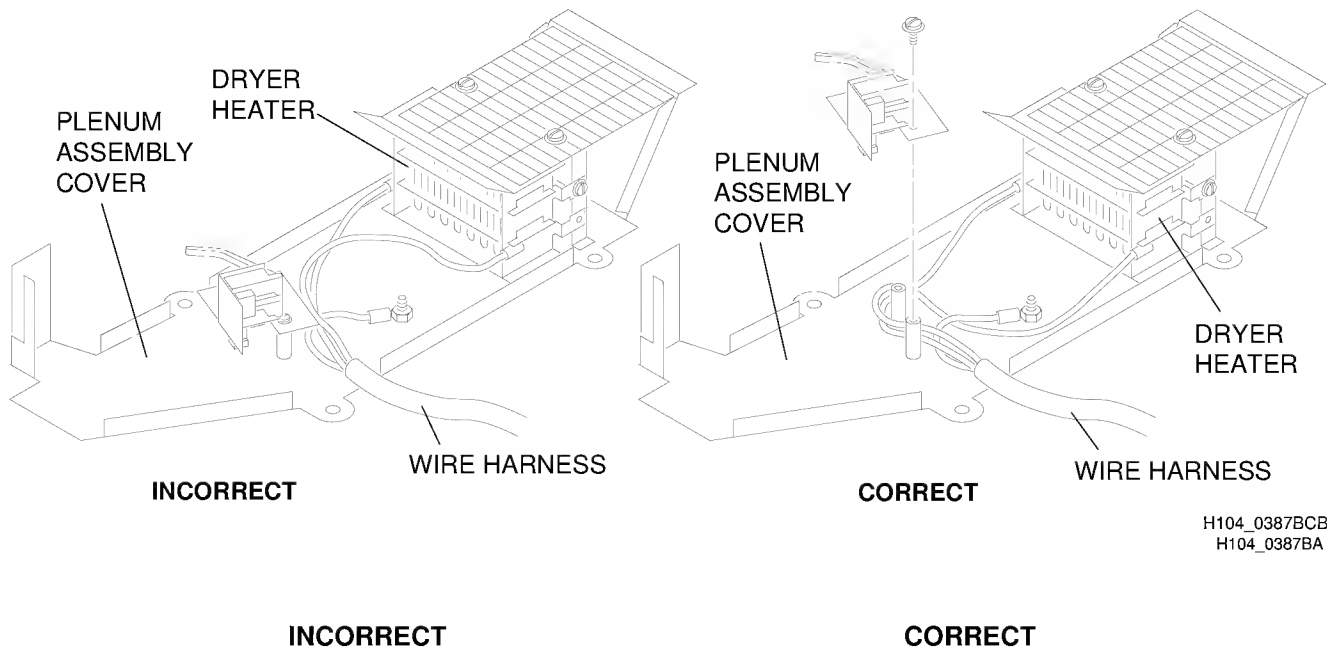


Replacement of the Dryer Heater

CAUTION

- When you install a new DRYER HEATER, check that all wires are in the correct openings in the PLENUM ASSEMBLY COVER and are not pinched.
- Install the WIRE HARNESS correctly. If the WIRE HARNESS is too close to the DRYER HEATER, the insulation on the wires may be damaged. See the "CORRECT" figure below **on the right**.

- [9] Install the new DRYER HEATER.
- [10] Check the wire positions. See the figure below **on the right**.
- [11] Reverse the above procedure to continue assembling the PROCESSOR.



Checking the Position of the Wire Harness

Removing the Air Flow Switch S3

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the NON-DRIVE SIDE PANEL and the EXIT PANEL.

WARNING

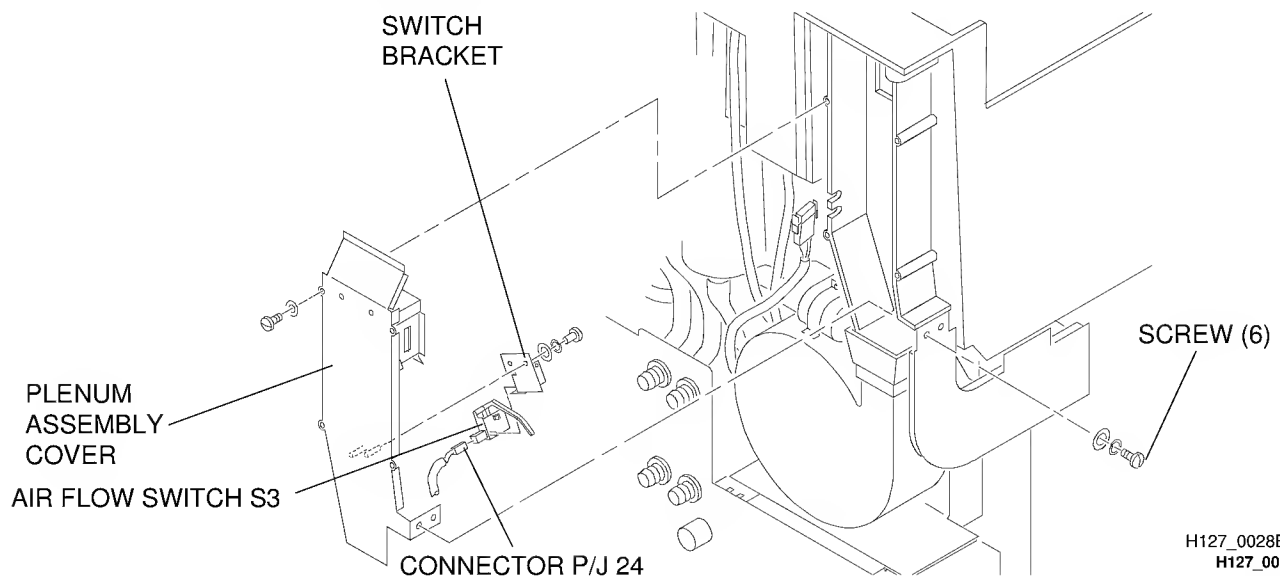
The PLENUM ASSEMBLY COVER may be hot.

- [4] Remove the 6 SCREWS and the PLENUM ASSEMBLY COVER.
- [5] Disconnect the CONNECTOR P/J 24 from the AIR FLOW SWITCH S3.
- [6] Disconnect and remove the AIR FLOW SWITCH from the SWITCH BRACKET.

CAUTION

When you install a new AIR FLOW SWITCH, check that all the wires are in the correct openings in the PLENUM ASSEMBLY COVER and are not pinched.

- [7] Reverse the above procedure to install a new AIR FLOW SWITCH and to assemble the PROCESSOR.



Replacement of the Air Flow Switch

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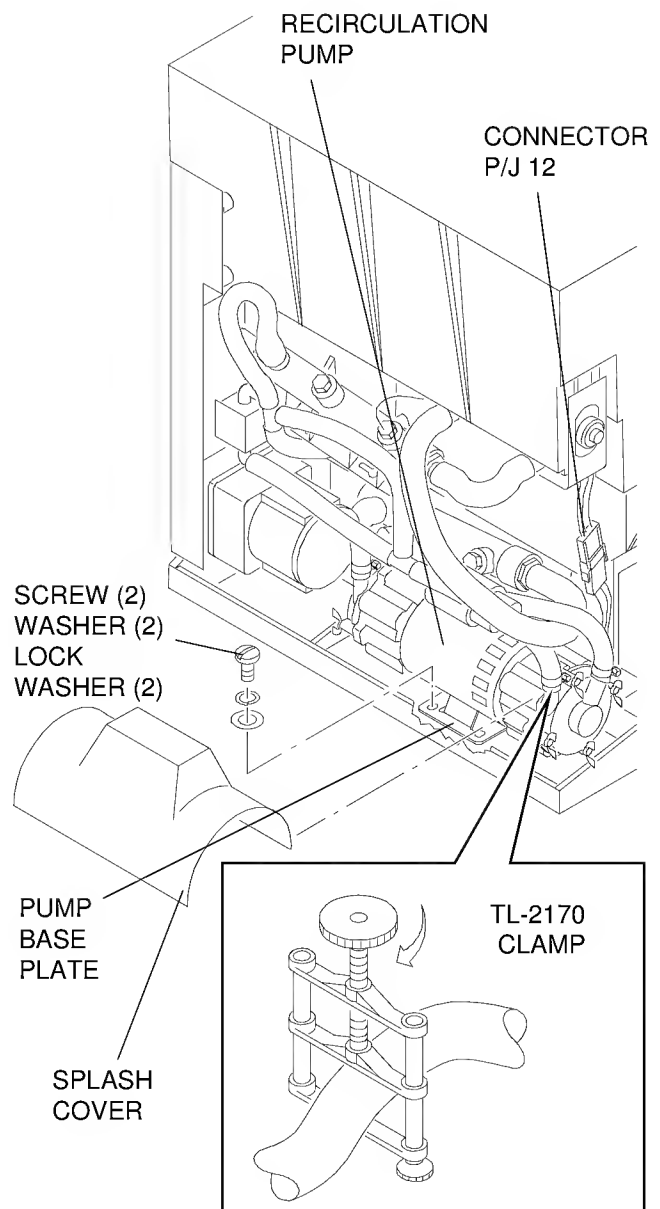
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Developer Recirculation System

Removing the Recirculation Pump B5

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the DRIVE SIDE PANEL.
- [4] Remove the SPLASH COVER.
- [5] Remove the 2 SCREWS, the 2 LOCK WASHERS, and the 2 WASHERS that hold the RECIRCULATION PUMP to the PUMP BASE PLATE.
- [6] Move the RECIRCULATION PUMP for better access to the HOSES.
- [7] Use 4 CLAMPS TL-2170 on the 2 developer HOSES and on the 2 fixer HOSES to the RECIRCULATION PUMP.
- [8] Loosen the 4 HOSE CLAMPS and remove the 2 developer HOSES and the 2 fixer HOSES from the RECIRCULATION PUMP.
- [9] Disconnect the CONNECTOR P/J 12.
- [10] Remove the RECIRCULATION PUMP.
- [11] Reverse the above procedure to install a new RECIRCULATION PUMP.



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Replacement of the Recirculation Pump

Removing the Impeller Housing or the Impeller

NOTE

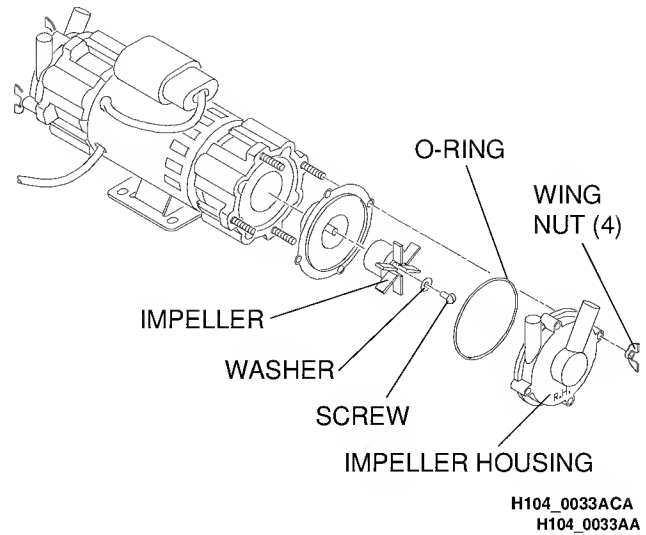
Use this procedure for either the developer IMPELLER HOUSING or the fixer IMPELLER HOUSING.

- [1] Remove the RECIRCULATION PUMP. See page 5-2.
- [2] Remove the 4 WING NUTS from the IMPELLER HOUSING.
- [3] Remove the IMPELLER HOUSING from the RECIRCULATION PUMP.

CAUTION

To prevent chemical contamination, do not interchange the developer and fixer IMPELLERS or the developer and fixer IMPELLER HOUSINGS.

- [4] Remove:
 - SCREW
 - WASHER
 - IMPELLER
- [5] Check the O-RING for wear. If necessary, install a new O-RING.
- [6] To prevent leakage, check that the O-RING is correctly seated.
- [7] Reverse the above procedure to install new parts and to assemble the PROCESSOR.



Replacement of the Impeller Housing or the Impeller

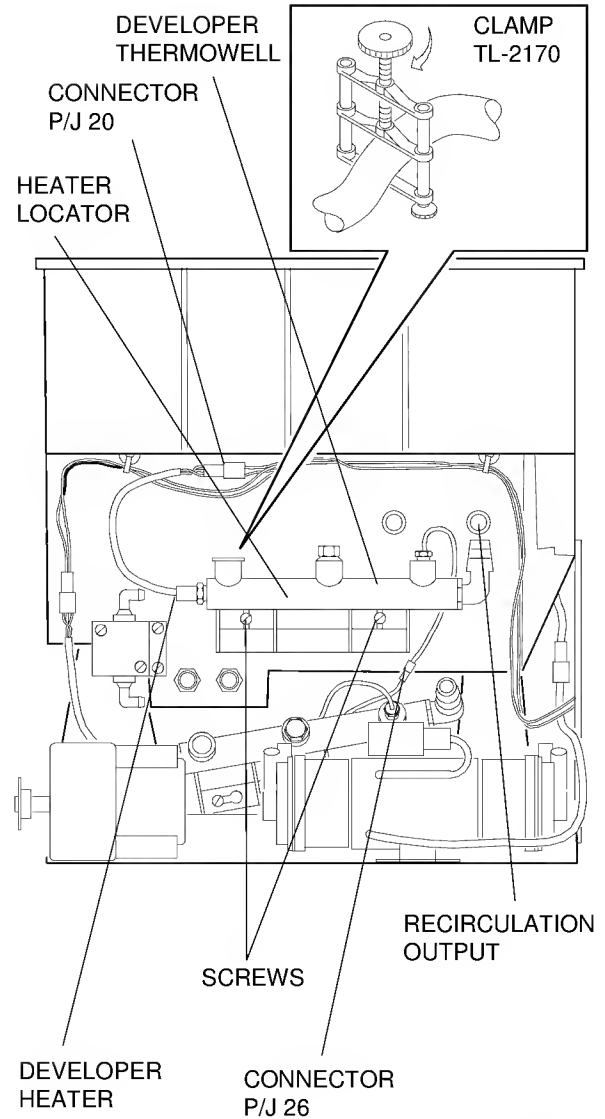
Removing the Developer Heater HR1

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the DRIVE SIDE PANEL and the EXIT PANEL.
- [4] Drain the DEVELOPER TANK to below the RECIRCULATION OUTPUT opening.
- [5] Use a CLAMP TL-2170 on the longer HOSE to the DEVELOPER THERMOWELL.
- [6] Disconnect the CONNECTOR P/J 20.
- [7] Remove the DEVELOPER HEATER.

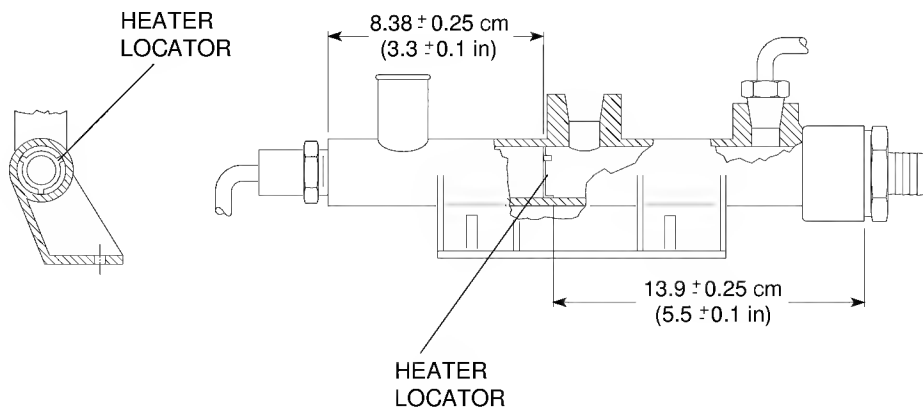
CAUTION

- Check that the internal HEATER LOCATOR is in the correct position inside the DEVELOPER THERMOWELL.
- Do not overtighten the parts when you install the DEVELOPER HEATER.
- Use SEALANT TL-3230 when installing the DEVELOPER HEATER into the DEVELOPER THERMOWELL. Use only TL-3230. Any other SEALANT will corrode the plastic in the THERMOWELL. See the instructions packed with the SEALANT.

- [8] Reverse the above procedure to install the new DEVELOPER HEATER.
- [9] Check for leakage at the DEVELOPER THERMOWELL.



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H104_0158CA



H104_0444BCA
H104_0444BA

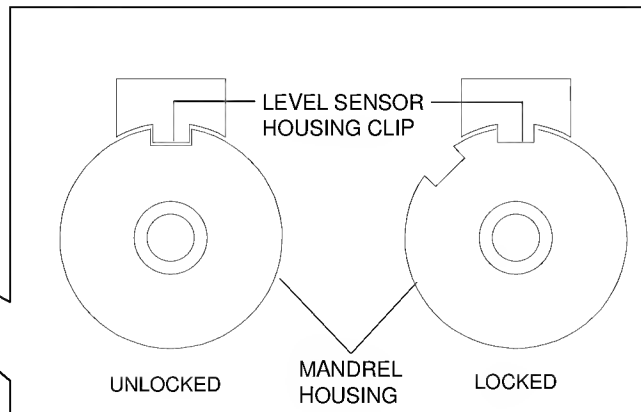
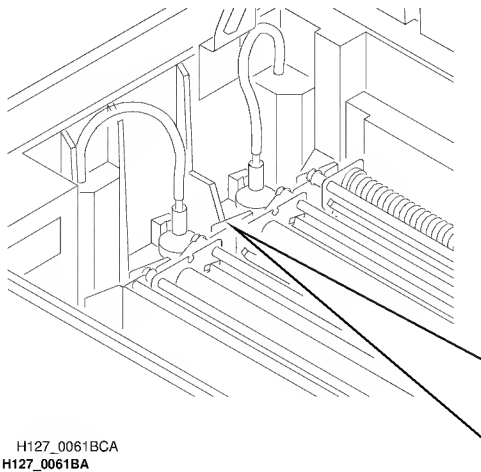
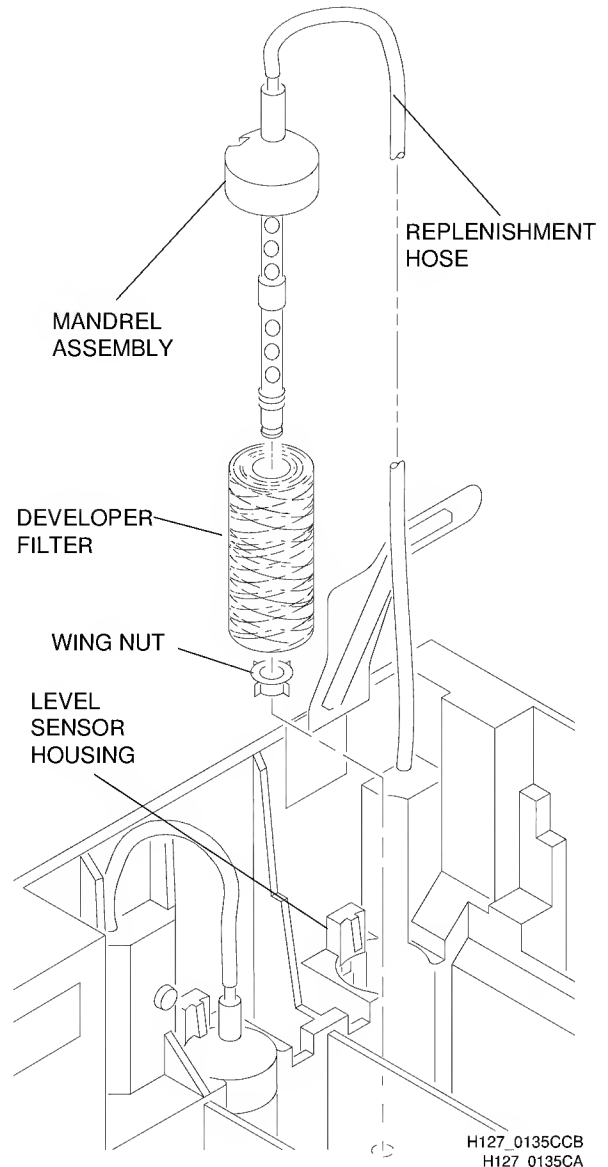
Removing the Developer Filter

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - WET SECTION COVER
 - REPLENISHMENT HOSE from the MANDREL ASSEMBLY
- [4] Rotate the MANDREL ASSEMBLY until the notch in the top of the ASSEMBLY aligns with the LEVEL SENSOR HOUSING CLIP on the LEVEL SENSOR HOUSING.

IMPORTANT

When removing the MANDREL ASSEMBLY, place a DRIP TRAY under it to prevent contamination of the fixer.

- [5] Remove the MANDREL ASSEMBLY by pulling straight up.
- [6] Remove:
 - WING NUT from the MANDREL ASSEMBLY
 - DEVELOPER FILTER from the MANDREL ASSEMBLY
- [7] Reverse the procedure to install a new DEVELOPER FILTER.
- [8] Rotate the MANDREL ASSEMBLY until the LEVEL SENSOR HOUSING CLIP is in the locked position. See the figure below.



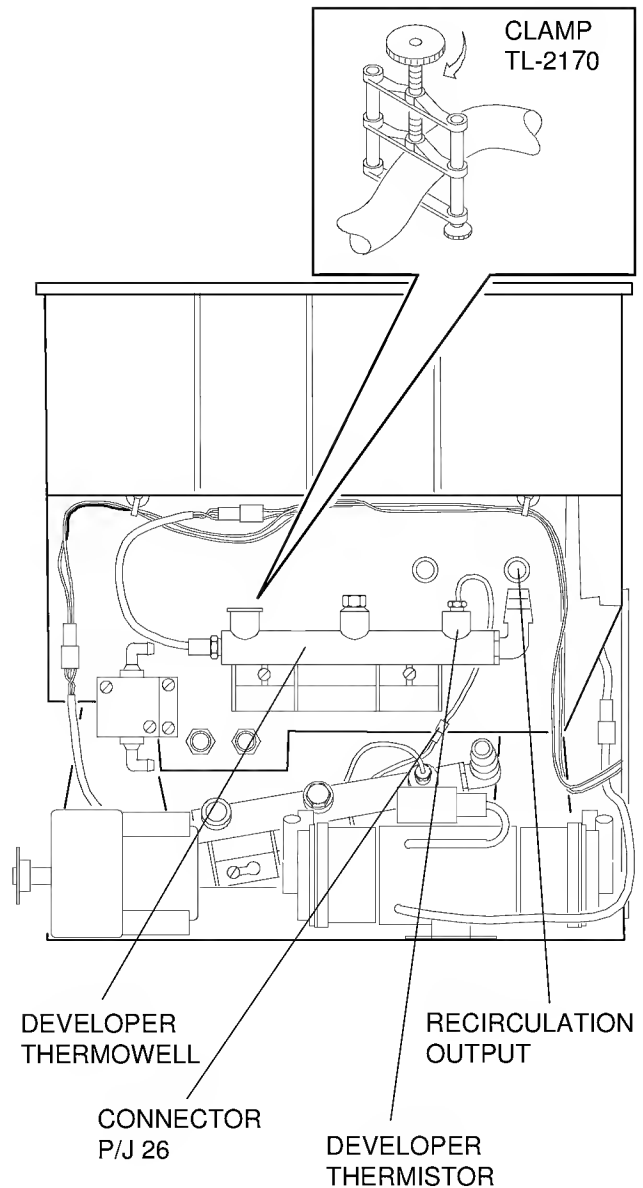
Removing the Developer Thermistor RT1

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the DRIVE SIDE PANEL.
- [4] Drain the DEVELOPER TANK until the developer is below the RECIRCULATION OUTPUT opening.
- [5] Use a CLAMP TL-2170 on the longer HOSE to the DEVELOPER THERMOWELL.
- [6] Disconnect the CONNECTOR P/J 26.
- [7] Remove the DEVELOPER THERMISTOR RT1 from the DEVELOPER THERMOWELL.

CAUTION

- Use SEALANT TL-3230 on the DEVELOPER THERMISTOR when installing the DEVELOPER THERMISTOR in the DEVELOPER THERMOWELL. Use only TL-3230. Any other SEALANT will corrode the plastic in the THERMOWELL.
- Do not overtighten the parts when installing the DEVELOPER THERMISTOR.

- [8] Reverse the above procedure to install a new DEVELOPER THERMISTOR.
- [9] Check for leakage at the DEVELOPER THERMOWELL.



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Replacement of the Developer Thermistor

Removing the Developer Cooling Solenoid L2

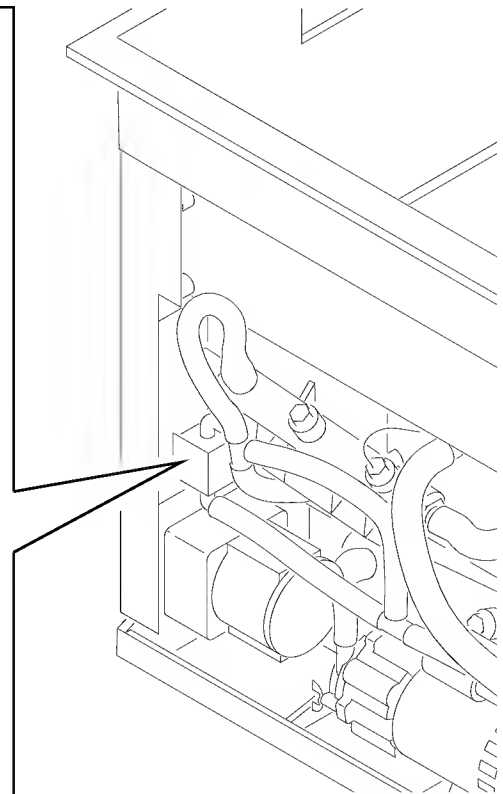
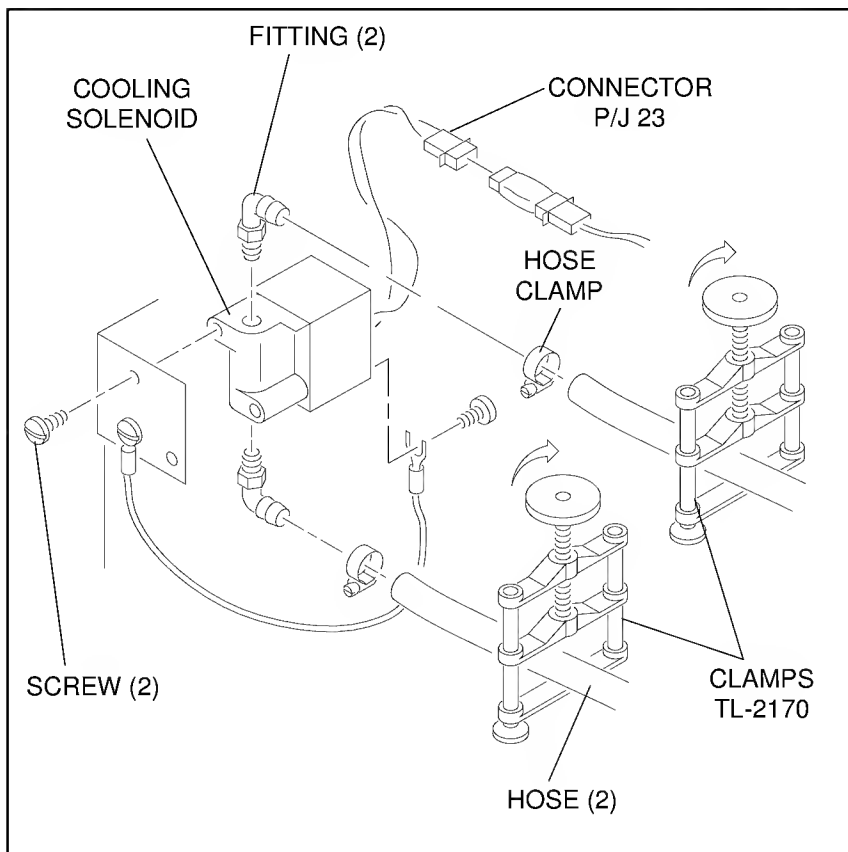
- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the DRIVE SIDE PANEL.
- [4] Use 2 CLAMPS TL-2170 on the 2 HOSES to the COOLING SOLENOID for the developer.
- [5] Remove the HOSE CLAMPS and the HOSES.
- [6] Remove the 2 SCREWS from the COOLING SOLENOID.
- [7] Disconnect the CONNECTOR P/J 23 and the ground wire at the COOLING SOLENOID.
- [8] Remove the COOLING SOLENOID.
- [9] Remove and keep the 2 FITTINGS.

CAUTION

- Install the COOLING SOLENOID with the C on the bottom and the A on the top.
- Use SEALANT TL-3230 on the FITTINGS. Use only TL-3230. Any other SEALANT will corrode the plastic in the THERMOWELL. See the instructions packed with the SEALANT.
- Do not overtighten the parts during installation of the COOLING SOLENOID.

- [10] Reverse the above procedure to install a new COOLING SOLENOID and to assemble the PROCESSOR.

- [11] Check for leakage at the COOLING SOLENOID.



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H104_0438HA

Replacement of the Developer Cooling Solenoid

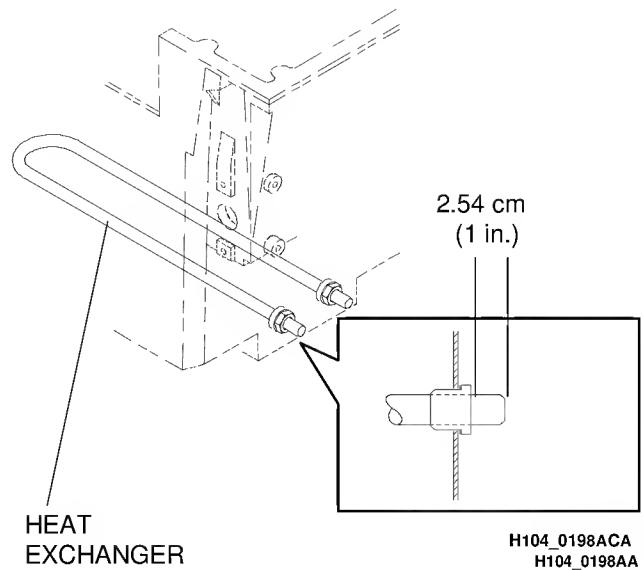
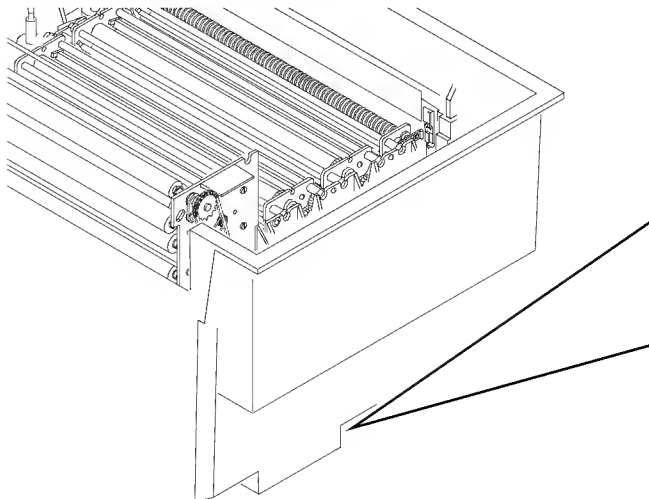
Removing the Heat Exchanger

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - DRIVE SIDE PANEL
 - WET SECTION COVER
 - TOP EXIT RACK
 - DRYER RACK
- [4] Use 2 CLAMPS TL-2170 on the 2 HOSES to the HEAT EXCHANGER.
- [5] Remove the HOSE CLAMPS and the HOSES.
- [6] Remove and keep the 2 PLUGS, the 2 WASHERS, and the 2 O-RINGS from the HEAT EXCHANGER. See the figure below.
- [7] Remove the HEAT EXCHANGER from the WASH TANK.

CAUTION

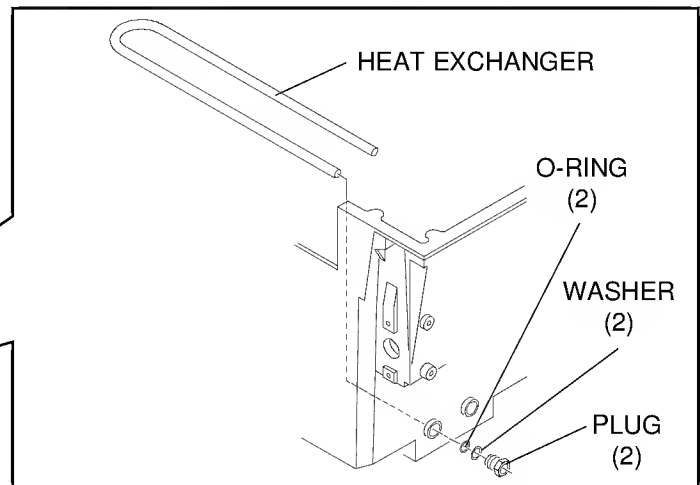
Do not overtighten the PLUGS.

- [8] Reverse the above procedure to install a new HEAT EXCHANGER and to assemble the PROCESSOR.



IMPORTANT

The HEAT EXCHANGER should extend from the TANK approximately 2.5 cm (1 in.). See the figure above.



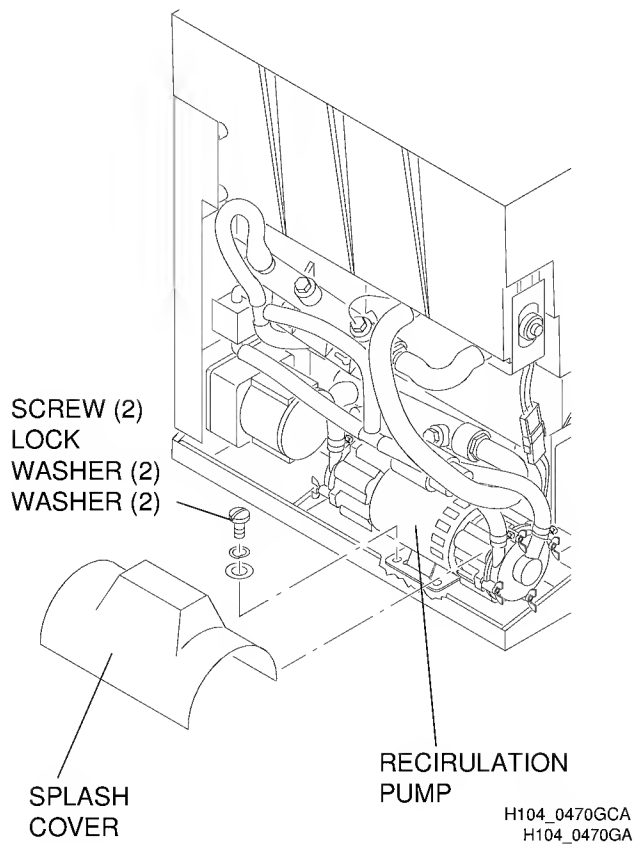
H104_0208BCB
H104_0208BA

Replacement of the Heat Exchanger

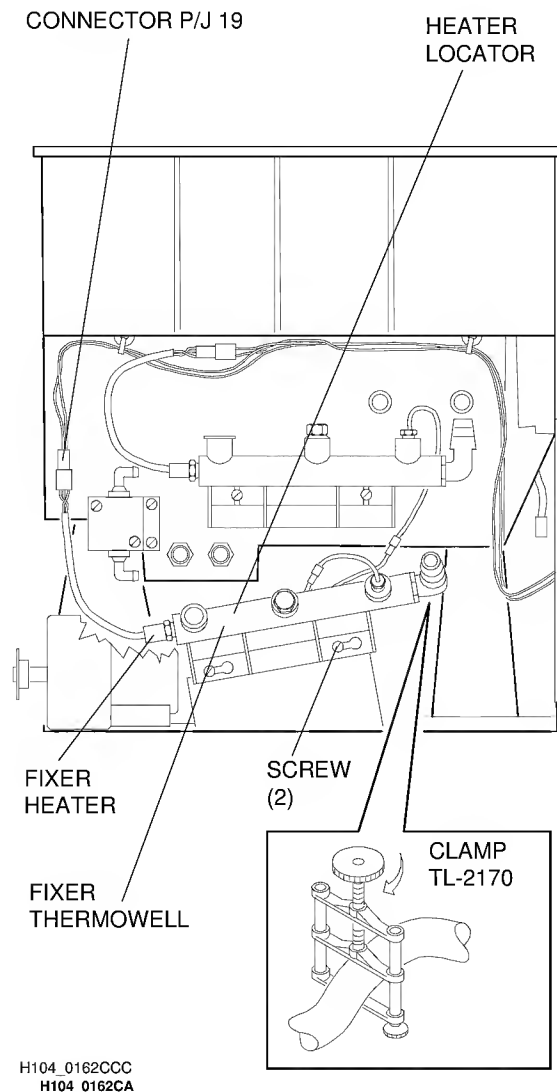
Fixer Recirculation System

Removing the Fixer Heater HR2

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the DRIVE SIDE PANEL.
- [4] Remove from the RECIRCULATION PUMP:
 - SPLASH COVER
 - 2 SCREWS
 - 2 LOCK WASHERS
 - 2 WASHERS
- [5] For access to the FIXER THERMOWELL, move the RECIRCULATION PUMP.
- [6] Remove the 2 SCREWS from the FIXER THERMOWELL.
- [7] Use 2 CLAMPS TL-2170 on the 2 HOSES to the FIXER THERMOWELL.
- [8] Move the FIXER THERMOWELL for access to the FIXER HEATER.
- [9] Remove the FIXER HEATER from the FIXER THERMOWELL.
- [10] Disconnect the CONNECTOR P/J 19.



Removal of the Splash Cover

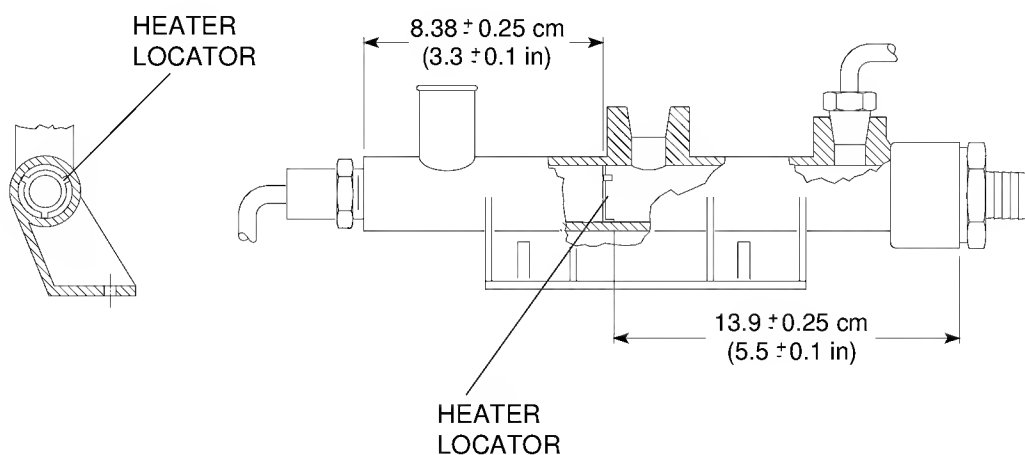


Replacement of the Fixer Heater

CAUTION

- Use SEALANT TL-3230 on the threads of the FIXER HEATER when installing the FIXER HEATER in the FIXER THERMOWELL. Use only TL-3230. Any other SEALANT will corrode the plastic in the THERMOWELL. See the instructions packed with the SEALANT.
- The HEATER LOCATOR must be in the correct position.
- Do not overtighten the parts when you install the FIXER HEATER.

- [11] Check that the internal HEATER LOCATOR is in the correct position inside the FIXER THERMOWELL. See the figure below.
- [12] Reverse the above procedure to install a new FIXER HEATER and to assemble the PROCESSOR.
- [13] Check for leakage at the FIXER THERMOWELL.



H104_0444BCA
H104_0444BA

Checking the Position of the Heater Locator inside the Thermowell

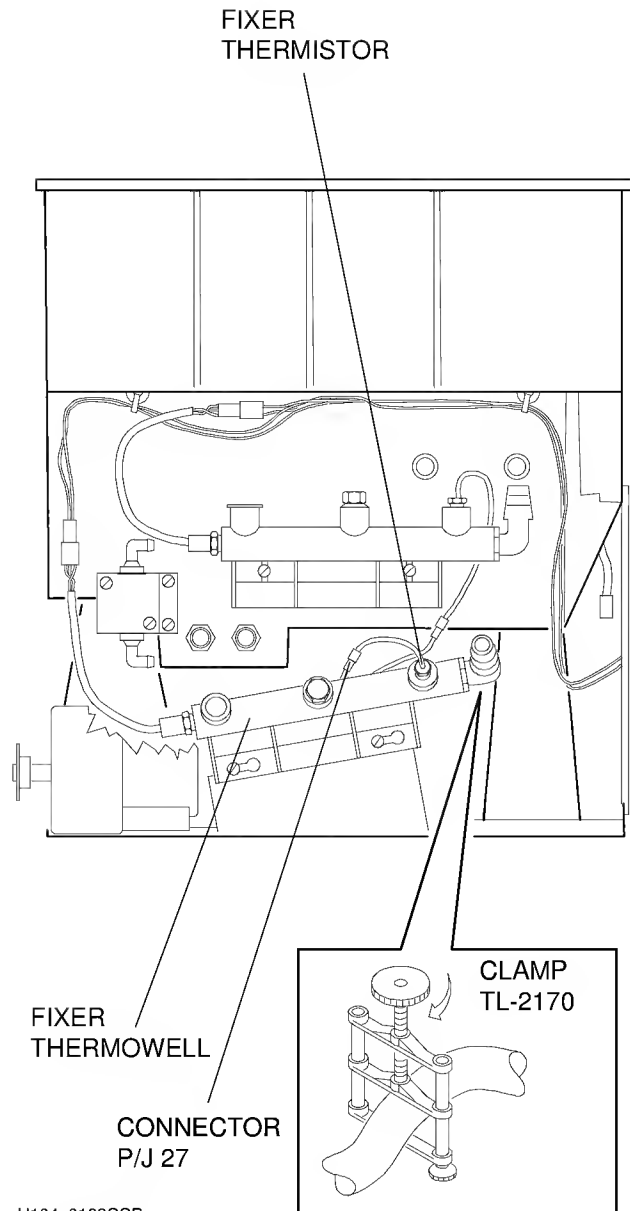
Removing the Fixer Thermistor RT2

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the DRIVE SIDE PANEL.
- [4] Use 2 CLAMPS TL-2170 on the 2 HOSES to the FIXER THERMOWELL.
- [5] Disconnect the CONNECTOR P/J 27.
- [6] Remove the FIXER THERMISTOR from the FIXER THERMOWELL.

CAUTION

Use SEALANT TL-3230 on the threads when you install the FIXER THERMISTOR. Use only TL-3230. Any other SEALANT will corrode the plastic in the THERMOWELL. See the instructions packaged with the SEALANT.

- [7] Reverse the above procedure to install a new FIXER THERMISTOR and to assemble the PROCESSOR.
- [8] Check for leakage at the FIXER THERMOWELL.



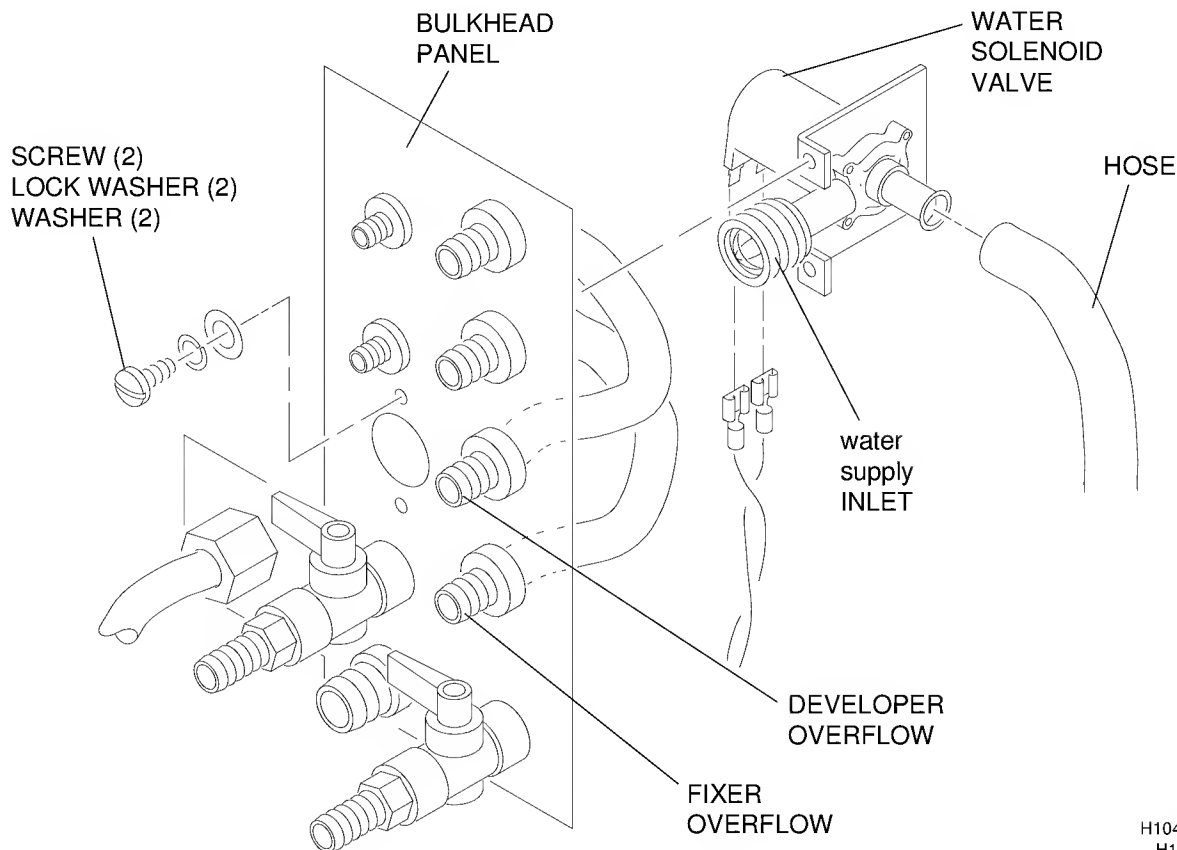
H104_0162CCB
H104_0162CA

Replacement of the Fixer Thermistor

Wash System

Removing the Water Solenoid Valve L1

- [1] Deenergize the PROCESSOR. See page 1-5.
 - [2] Remove the NON-DRIVE SIDE PANEL.
 - [3] Stop the flow of water to the PROCESSOR.
(Turn the water off.)
- NOTE**
- Disconnect the water HOSE very slowly to release the pressure in the HOSE.
- [4] Disconnect the HOSE to the water supply INLET to the PROCESSOR at the WATER SOLENOID VALVE.
 - [5] Loosen the 2 HOSE CLAMPS and remove, from the BULKHEAD PANEL, the HOSES for:
 - FIXER OVERFLOW
 - DEVELOPER OVERFLOW
- [6] Remove the 2 SCREWS, the 2 LOCK WASHERS, and the 2 WASHERS from the WATER SOLENOID VALVE.
 - [7] Loosen the HOSE CLAMP and remove the WATER HOSE from the WATER SOLENOID VALVE.
 - [8] Disconnect the wires from the WATER SOLENOID VALVE.
 - [9] Remove the WATER SOLENOID VALVE.
 - [10] Reverse the above procedure to install a new WATER SOLENOID VALVE and to assemble the PROCESSOR.
- IMPORTANT**
- Check for leakage at the WATER SOLENOID VALVE.



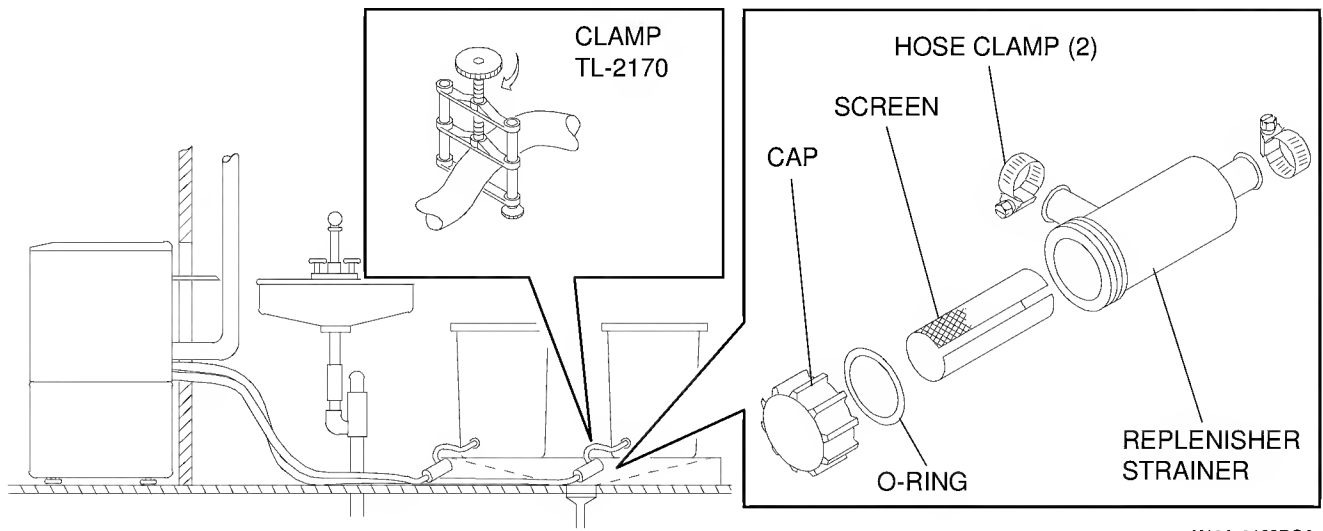
H104_0446HCA
H104_0446HA

Replacement of the Water Solenoid Valve

Replenishment System

Removing the Replenisher Strainer Assemblies and Screens

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Use 2 CLAMPS TL-2170 on the REPLENISHMENT HOSES on either side of the REPLENISHER STRAINER.
- [3] Loosen the 2 HOSE CLAMPS and remove the REPLENISHER STRAINER.
- [4] Remove the CAP.
- [5] Remove the SCREEN from the REPLENISHER STRAINER.
- [6] Clean the SCREEN or, if necessary, install a new SCREEN.
- [7] Check the O-RING for wear. If necessary, install a new O-RING.
- [8] Reverse the above procedure to assemble.



H104_0163BCA
H104_0163BA

Replacement of the Replenisher Strainer Assembly or Screens

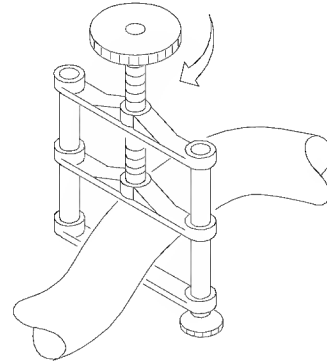
Removing the Developer or Fixer Replenishment Pump, B3 or B4

NOTE

The procedure for removing the developer REPLENISHMENT PUMP is the same as for removing the fixer REPLENISHMENT PUMP, except for the quantity of SCREWS.

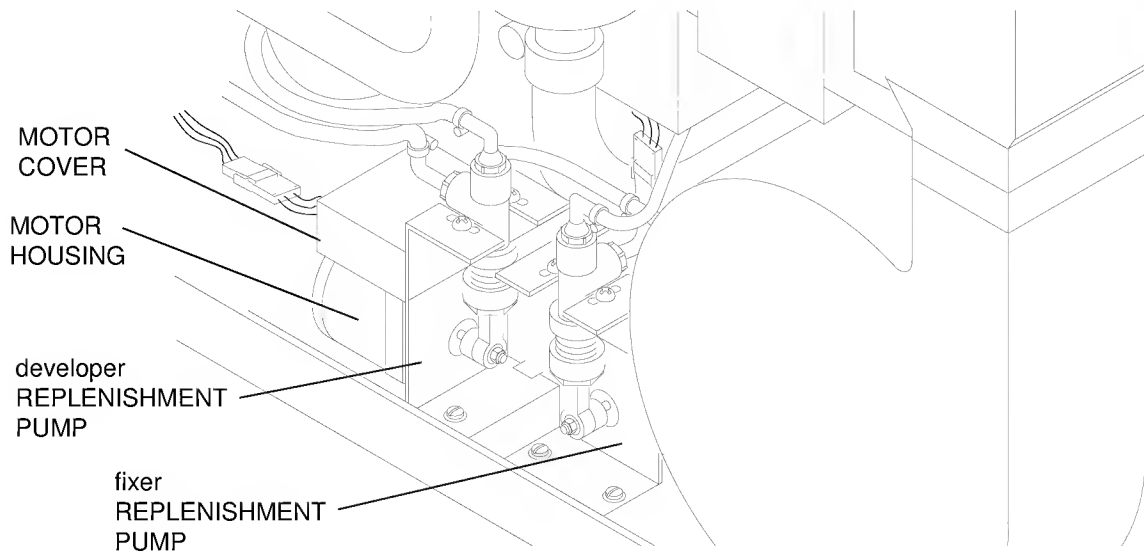
- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the NON-DRIVE SIDE PANEL.
- [4] Use 2 CLAMPS TL-2170 on the 2 HOSES at the REPLENISHMENT PUMP.
- [5] Loosen the HOSE CLAMPS and remove the 2 HOSES from the REPLENISHMENT PUMP.
- [6] Remove the 2 SCREWS, the LOCK WASHERS, and the WASHERS from the PUMP BASE PLATE.
- [7] Disconnect the CONNECTOR P/J 15 for the developer, or P/J 16 for the fixer.

- [8] Remove the REPLENISHMENT PUMP.
- [9] Reverse the above procedure to assemble.



H104_0257AA

Clamp TL-2170



H104_0023BCE
H104_0023BA

Replacement of the Developer or Fixer Replenishment Pump

Removing the Poppet Valves for the Replenishment Pumps

NOTE

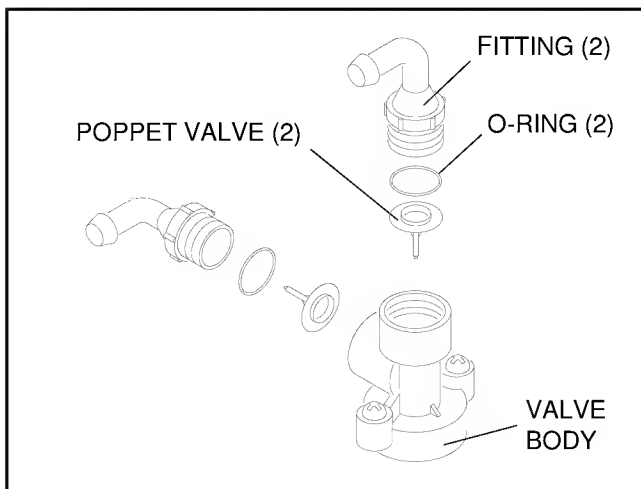
Use this procedure for removing the POPPET VALVES in either the fixer or the developer REPLENISHMENT PUMP.

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the NON-DRIVE SIDE PANEL.
- [4] Use 2 CLAMPS TL-2170 on the 2 HOSES at the REPLENISHMENT PUMP.
- [5] Loosen the HOSE CLAMPS and remove the 2 HOSES from the REPLENISHMENT PUMP.
- [6] Remove the 2 FITTINGS from the VALVE BODY.

IMPORTANT

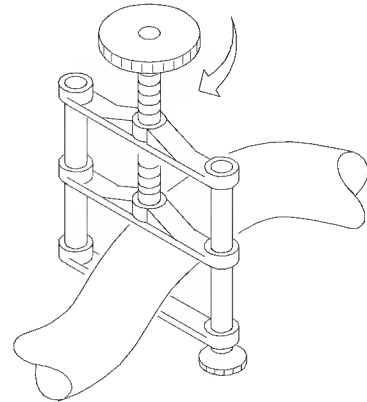
- Observe the direction of the POPPET VALVES before you remove them.
- Removing the REPLENISHMENT PUMP may be necessary for easier access to the POPPET VALVES. See page 5-15 for the removal procedure.

- [7] Remove the 2 O-RINGS and the 2 POPPET VALVES from the VALVE BODY.



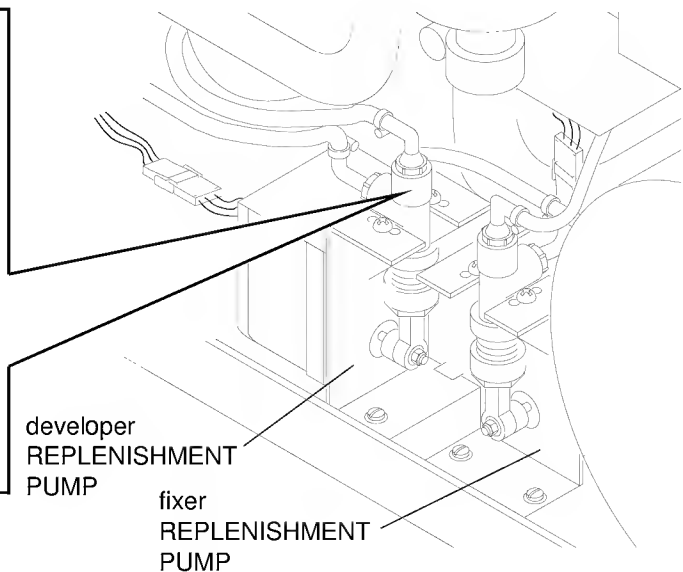
H104_0167BCA
H104_0167BA

- [8] Install all new O-RINGS and POPPET VALVES in the VALVE BODY.
- [9] Check that the O-RINGS are seated correctly and that the POPPET VALVES are in the correct position in the VALVE BODY.
- [10] Reverse the above procedure to assemble.



H104_0257AA

Clamp TL-2170



Replacement of the Poppet Valves in the Replenishment Pumps

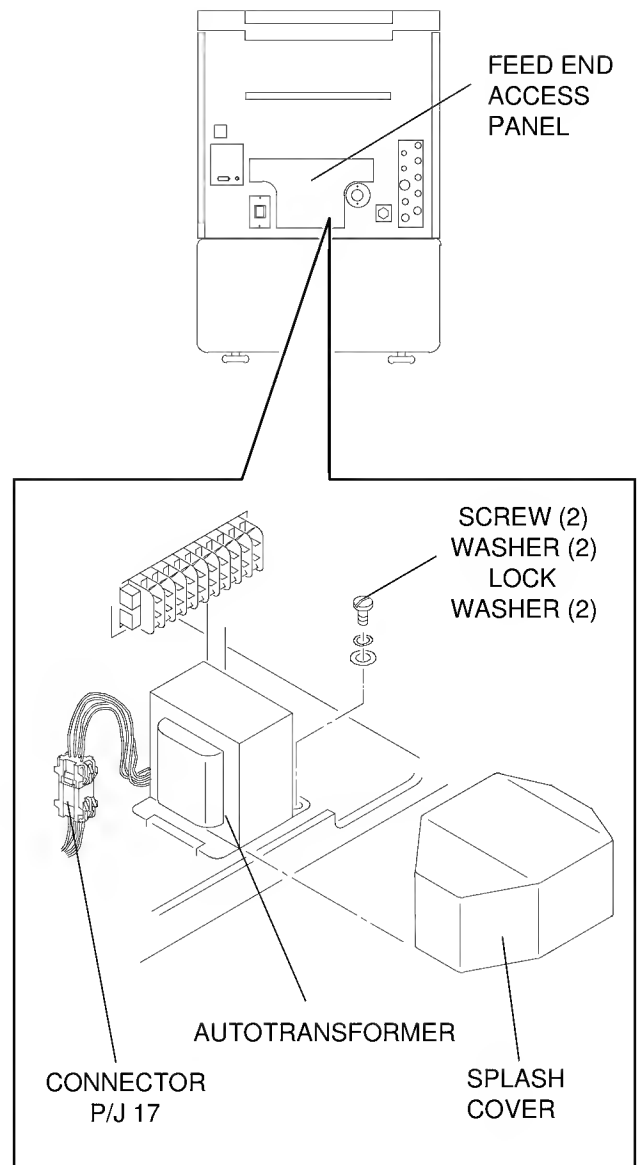
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Removing the Autotransformer T1

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Remove the FEED END ACCESS PANEL.
- [3] Disconnect the CONNECTOR P/J 17.
- [4] Remove the SPLASH COVER.
- [5] Remove the AUTOTRANSFORMER.
- [6] Reverse the above procedure to install a new AUTOTRANSFORMER and to assemble the PROCESSOR.



H104_0171CCA
H104_0171CA

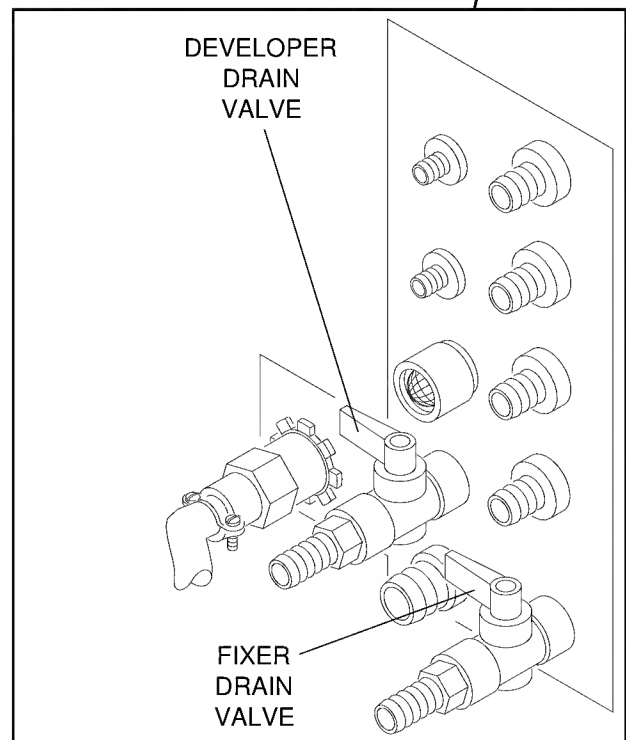
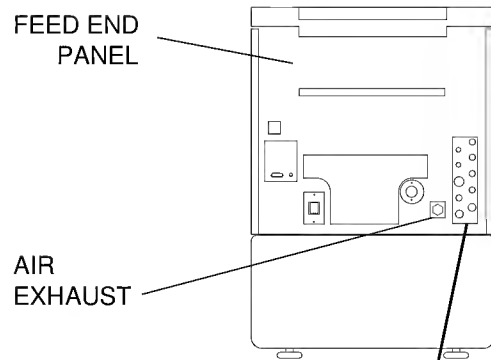
Replacement of the Autotransformer

Removing the Feed End Panel

NOTE

You must do this procedure before you can do the procedure on page 6-5.

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] To avoid contaminating the solutions, drain the processing TANKS.
 - (a) Open the DEVELOPER DRAIN VALVE and FIXER DRAIN VALVE. See page 1-8 for more information.
- [3] Disconnect the AIR EXHAUST from the PROCESSOR.



H104_0466CCB
H104_0466CA

The Drain Valves and Air Exhaust

- [4] Remove the FEED SHELF.

NOTE

The SCREWS that hold the FEED END PANEL are different sizes. Record the original positions of the SCREWS for easier installation.

- [5] Remove from the FEED END PANEL:

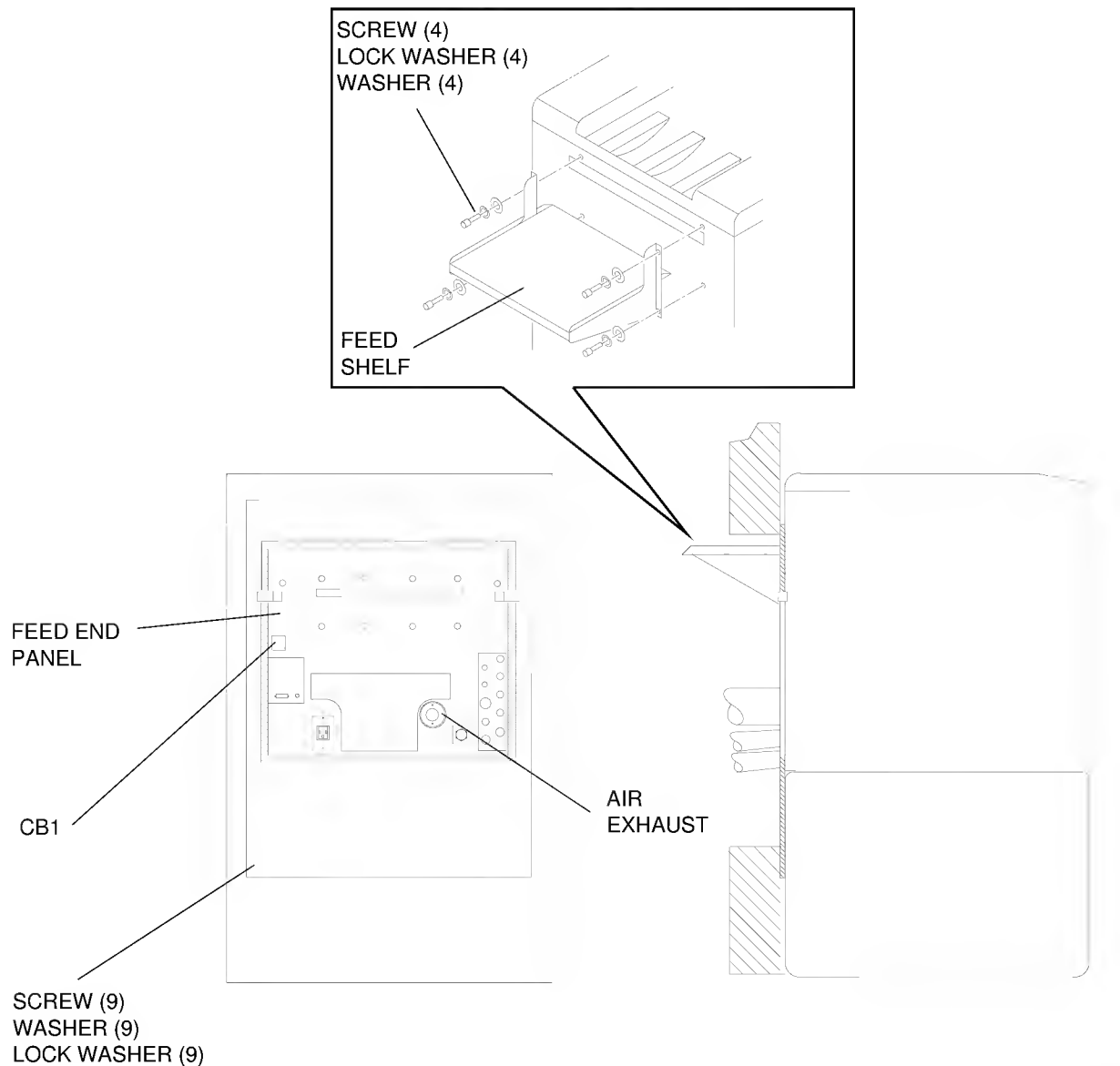
- 9 SCREWS
- 9 LOCK WASHERS
- 9 WASHERS

- [6] Remove the 2 BRACKETS that hold the PROCESSOR to the wall.

- [7] Move the PROCESSOR about 15 cm (6 in.) from the wall.

- [8] Remove the FEED END PANEL from the PROCESSOR.

- [9] Reverse the above procedure to assemble the FEED END PANEL.

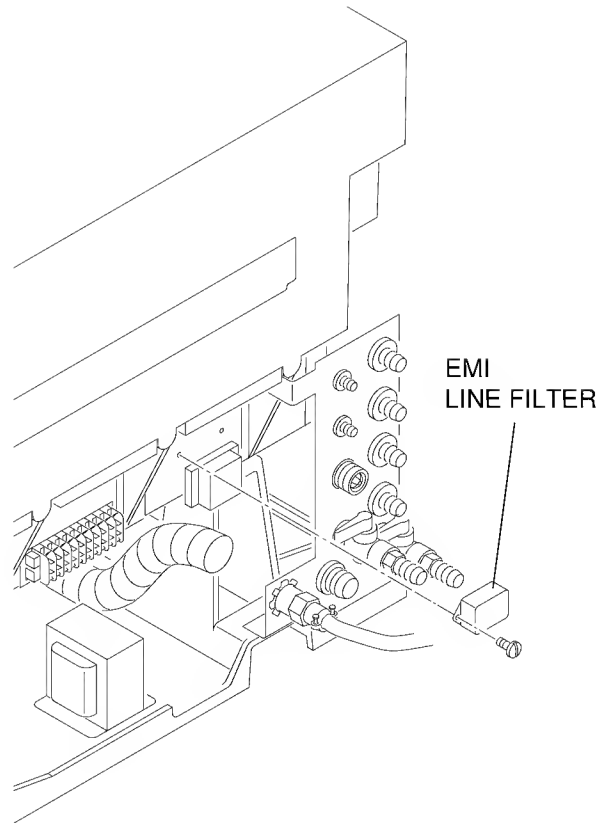


H104_0172DCA
H104_0172DA

Removal of the Feed End Panel

Removing the EMI Line Filter LF1

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Remove the FEED END PANEL. See page 6-3.
- [3] Record the positions of the wires.
- [4] Remove the wires at the EMI LINE FILTER.
- [5] Remove the EMI LINE FILTER.
- [6] Reverse the above procedure to install a new EMI LINE FILTER and to assemble the PROCESSOR.

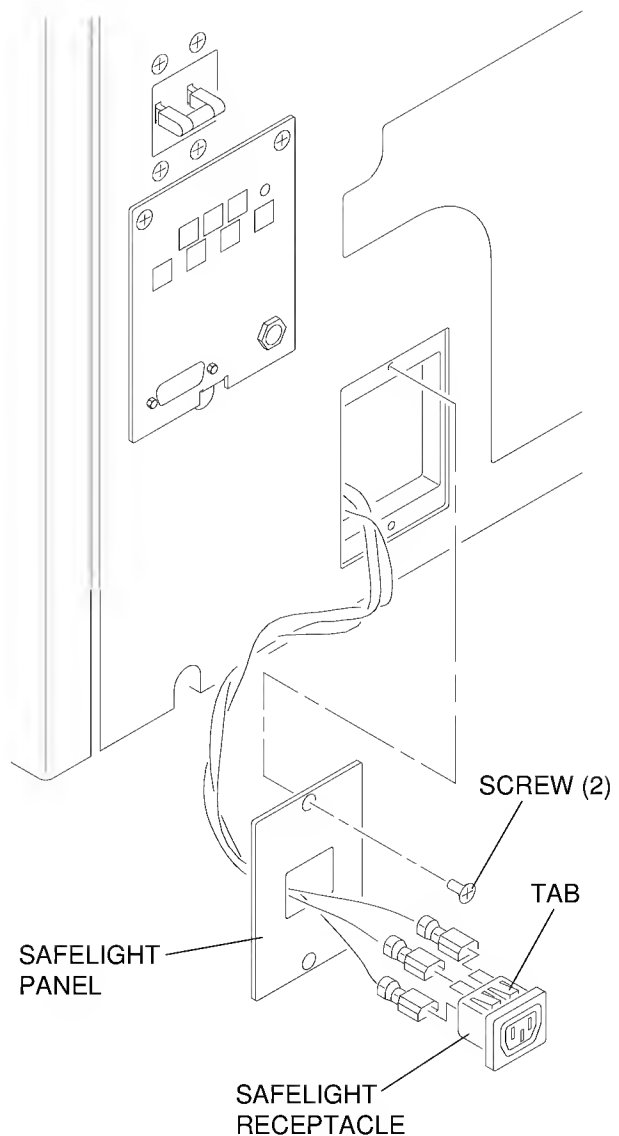


H104_0173CCA
H104_0173CA

Replacement of the EMI Line Filter

Removing the Safelight Receptacle J35

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Remove the 2 SCREWS and the SAFELIGHT PANEL.
- [3] Record the positions of the wires.
- [4] Disconnect the 3 wires at the SAFELIGHT RECEPTACLE.
- [5] Press the TABS together to remove the SAFELIGHT RECEPTACLE from the SAFELIGHT PANEL.
- [6] Reverse the above procedure to install a new SAFELIGHT RECEPTACLE and to assemble the PROCESSOR.

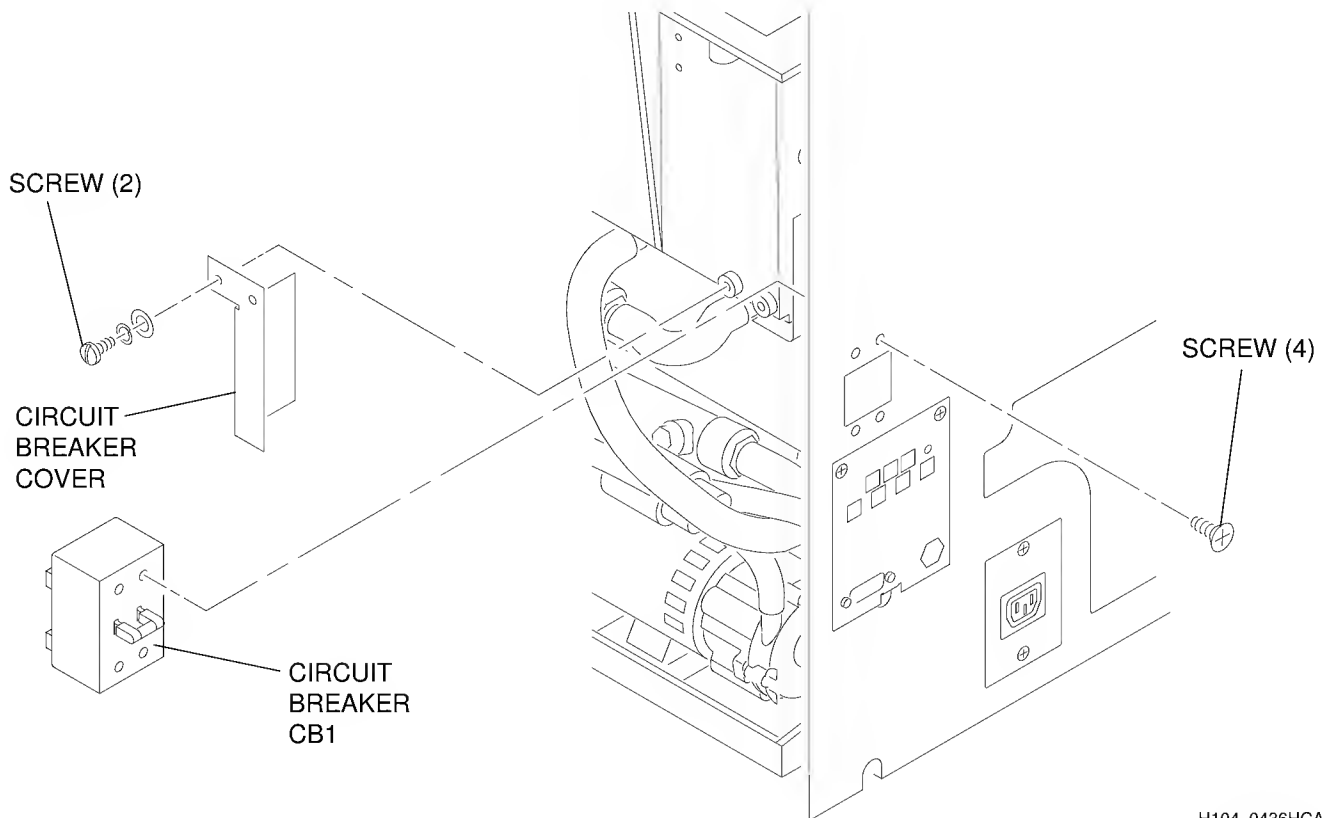


H104_0437CCA
H104_0437CA

Replacement of the Safelight Receptacle

Removing the AC Circuit Breaker CB1

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the DRIVE SIDE PANEL.
- [4] Remove the 2 SCREWS and the CIRCUIT BREAKER COVER.
- [5] Remove the 4 SCREWS that hold the CIRCUIT BREAKER CB1 to the PROCESSOR.
- [6] Record the positions of the wires at the CIRCUIT BREAKER CB1.
- [7] Disconnect the wire connections from the CIRCUIT BREAKER CB1.
- [8] Reverse the above procedure to install a new CIRCUIT BREAKER CB1 and to assemble the PROCESSOR.

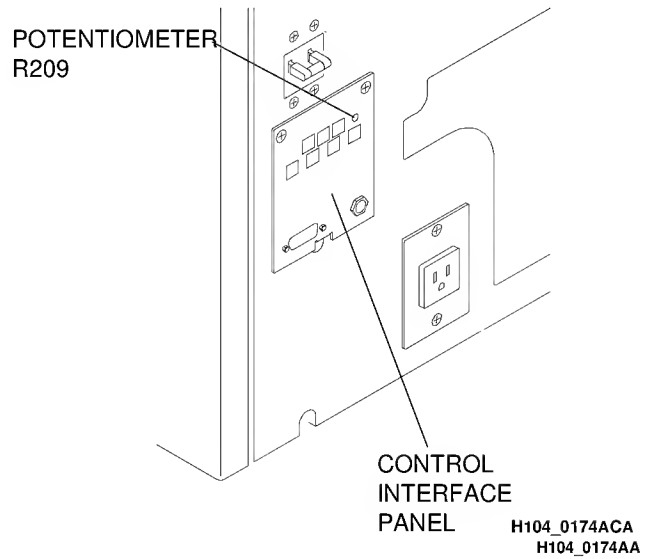


H104_0436HCA
H104_0436HA

Replacement of the AC Circuit Breaker CB1

Adjusting the Intensity of the Lamp on the 200 Circuit Board, the Control Interface

- [1] Rotate the POTENTIOMETER R209 to adjust the intensity of the lamp on the 200 CIRCUIT BOARD that is behind the CONTROL INTERFACE PANEL.
- (a) Rotate the POTENTIOMETER R209 **clockwise** ↻ to **increase** the lamp intensity.
 - (b) Rotate the POTENTIOMETER R209 **counterclockwise** ↻ to **decrease** the lamp intensity.



Adjustment of the Intensity of the Lamp on the 200 Circuit Board

Removing the 200 Circuit Board, the Control Interface

CAUTION

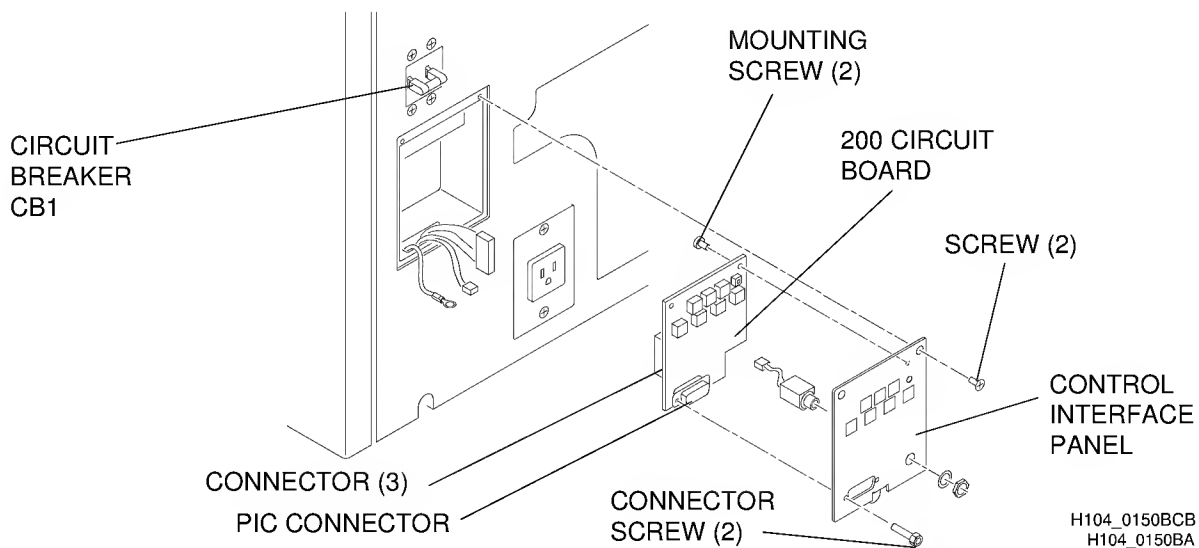
Possible damage from electrostatic discharge.

- [3] Reverse the above procedure to install a new 200 CIRCUIT BOARD and to assemble the PROCESSOR.

[1] Deenergize the PROCESSOR. See page 1-5.

[2] Remove:

- 2 SCREWS from the CONTROL INTERFACE PANEL
- CONTROL INTERFACE PANEL from the PROCESSOR
- 3 CONNECTORS from the 200 CIRCUIT BOARD
- 2 MOUNTING SCREWS from the 200 CIRCUIT BOARD
- 2 CONNECTOR SCREWS from the PIC CONNECTOR
- 200 CIRCUIT BOARD from the CONTROL INTERFACE PANEL



Replacement of the 200 Circuit Board, the Control Interface

Removing the 500 Circuit Board, the Microprocessor

CAUTION

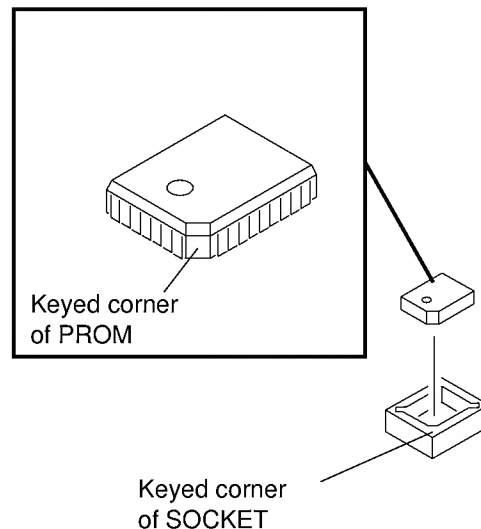
Possible damage from electrostatic discharge.

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER and remove the EXIT PANEL.
- [3] Extend the ELECTRICAL BOX and open the COVER.
- [4] Disconnect the 9 CONNECTORS from the 500 CIRCUIT BOARD.
- [5] Remove the 8 SCREWS and the 500 CIRCUIT BOARD.
- [6] Using EXTRACTION TOOL TL-4430, remove and transfer the 4 PROMS/EEPROMS U17, U18, U19, and U20 from the existing 500 CIRCUIT BOARD:

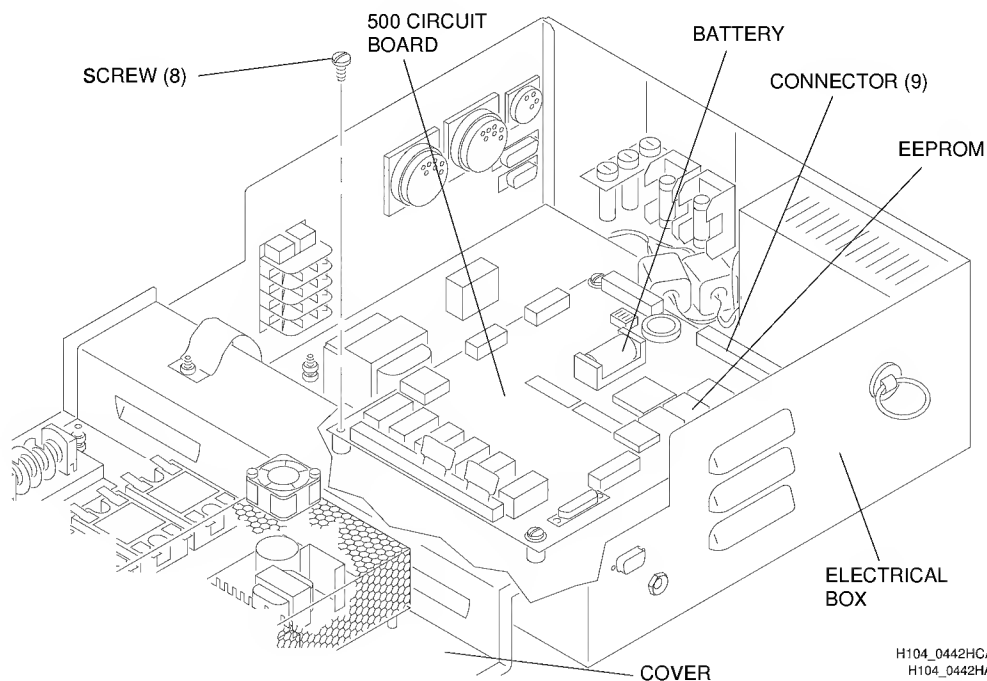
- (a) Move the 4 PROMS/EEPROMS U17, U18, U19, and U20 to the new 500 CIRCUIT BOARD.
- (b) Place each EEPROM carefully on the SOCKET.
- (c) Check that the keyed corners are aligned.

- (d) Press the EEPROM firmly into the SOCKET.

- [7] Check that the EEPROMS are installed in the correct SOCKETS.
- [8] Remove the BATTERY from the existing 500 CIRCUIT BOARD and install the BATTERY on the new 500 CIRCUIT BOARD.



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H104_0312AC

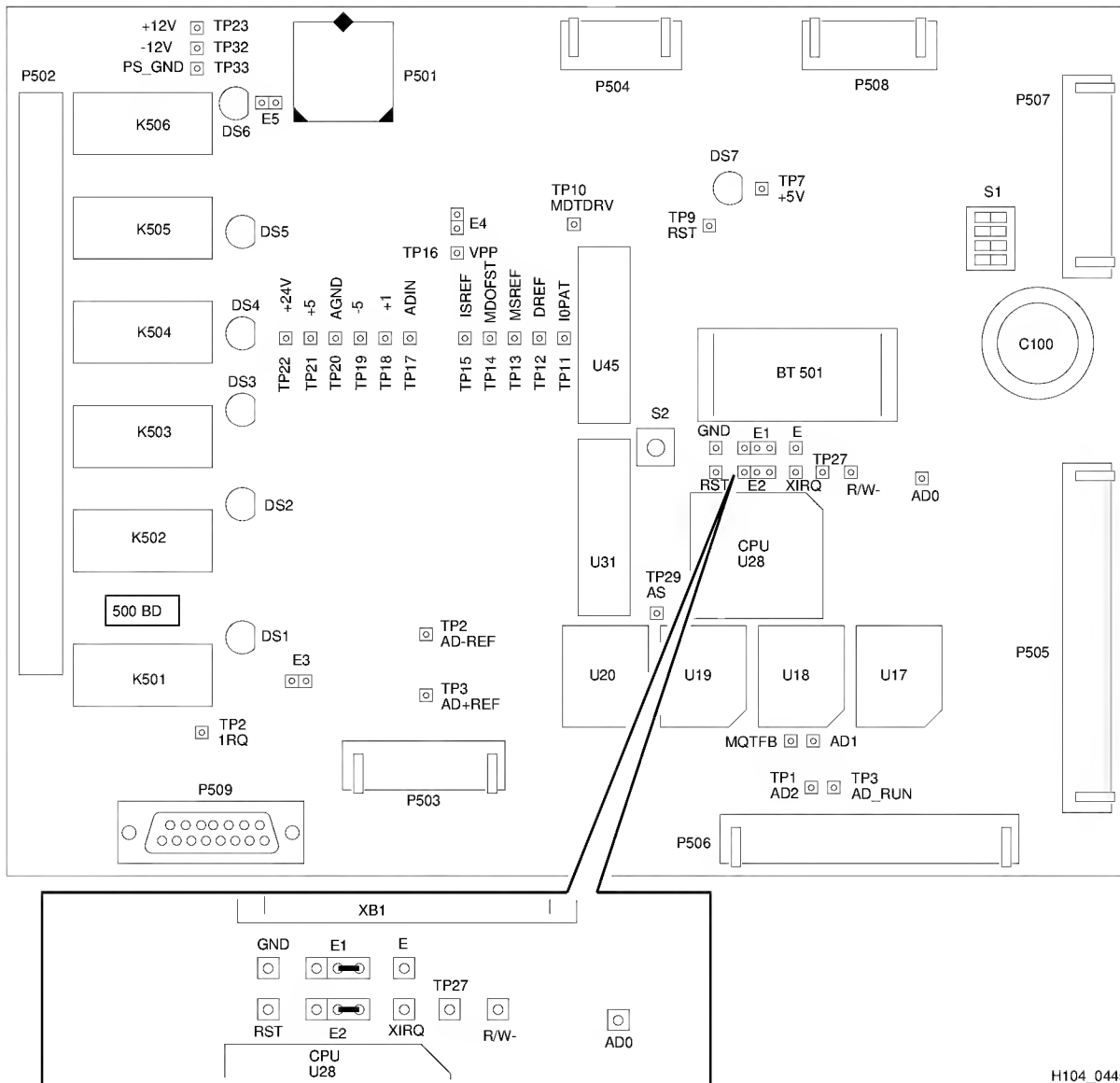


H104_0442HCA
H104_0442HA

- [9] Check the positions of the SWITCHES and the JUMPERS:

Position	Installation
S1 Switch	All positions off
Jumper E1	Jumper Pins 1 and 2
Jumper E2	Jumper Pins 1 and 2
Jumper E3	None
Jumper E4	None
Jumper E5	None

- [10] Install the new 500 CIRCUIT BOARD in the PROCESSOR.
- [11] Connect the 9 CONNECTORS removed in Step [4].
- [12] Check for correct operation of the PROCESSOR.



H104_0445DA

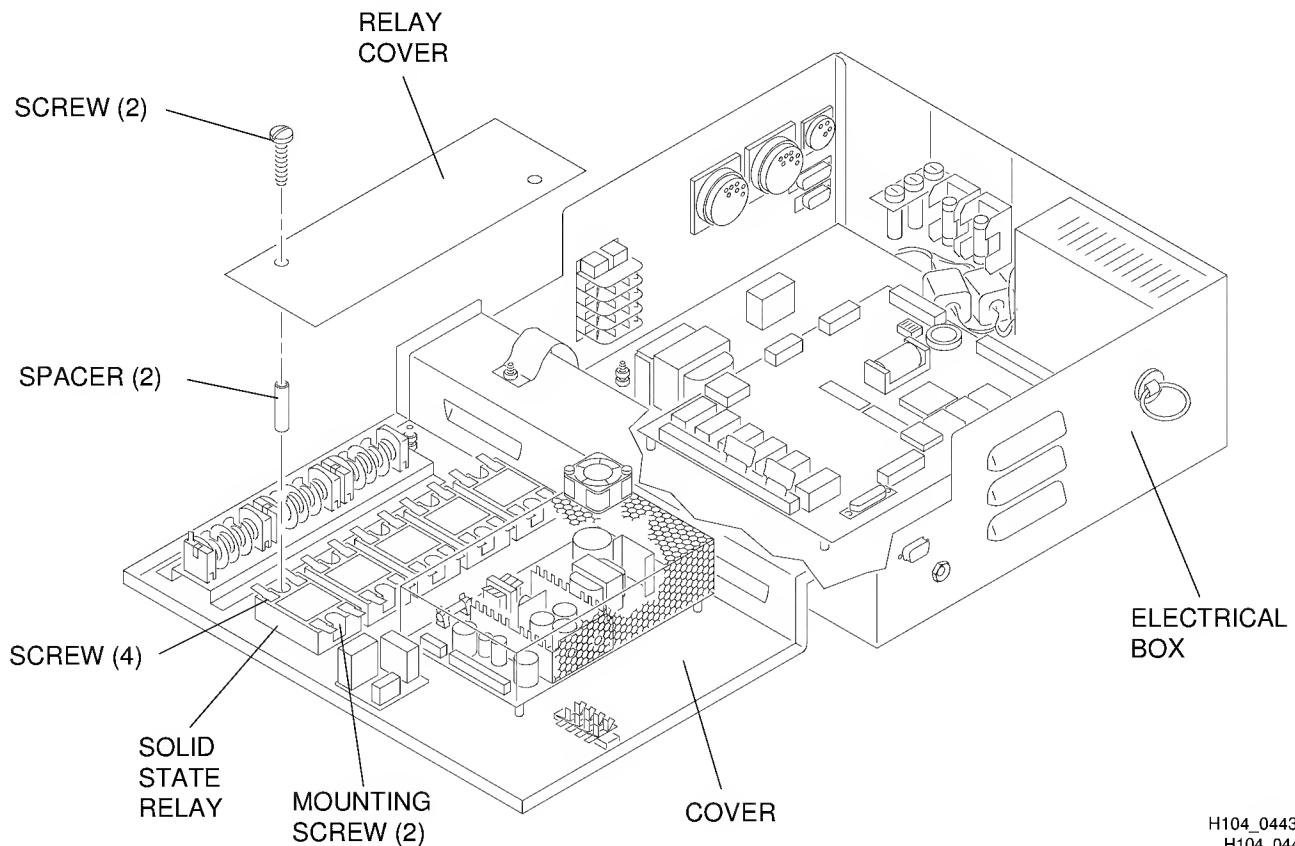
Checking the Positions of the Switches and the Jumpers on the 500 Circuit Board, the Microprocessor

Removing a Solid State Relay

CAUTION

Possible damage from electrostatic discharge.

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the EXIT PANEL.
- [4] Extend the ELECTRICAL BOX.
- [5] Open the COVER of the ELECTRICAL BOX.
- [6] Remove:
 - 2 SCREWS
 - 2 SPACERS
 - RELAY COVER
- [7] Record the 4 wire positions on the SOLID STATE RELAY that you want to remove.
- [8] Remove the 4 SCREWS that hold the wires to the SOLID STATE RELAY.
- [9] Remove the 2 MOUNTING SCREWS from the SOLID STATE RELAY.
- [10] Lift the SOLID STATE RELAY from the ELECTRICAL BOX.
- [11] Apply THERMAL GREASE TL-2324 under the SOLID STATE RELAY. Use a thin application, but cover the area under the SOLID STATE RELAY completely.
- [12] Reverse the above procedure to install new SOLID STATE RELAYS and to assemble the PROCESSOR.



H104_0443HCA
H104_0443HA

Replacement of the Solid State Relay in the Electrical Box

Removing the Drive Motor Controller A2

CAUTION

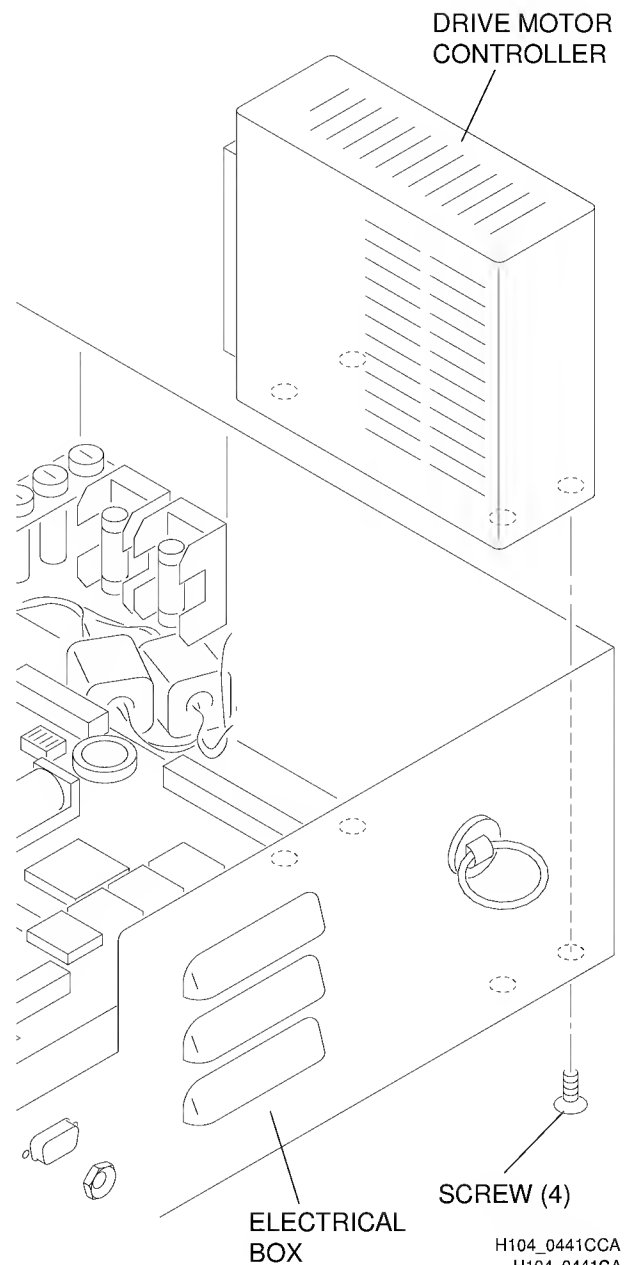
Possible damage from electrostatic discharge.

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the EXIT PANEL.
- [4] Extend the ELECTRICAL BOX.
- [5] Open the ELECTRICAL BOX.
- [6] Remove the 4 SCREWS.

NOTE

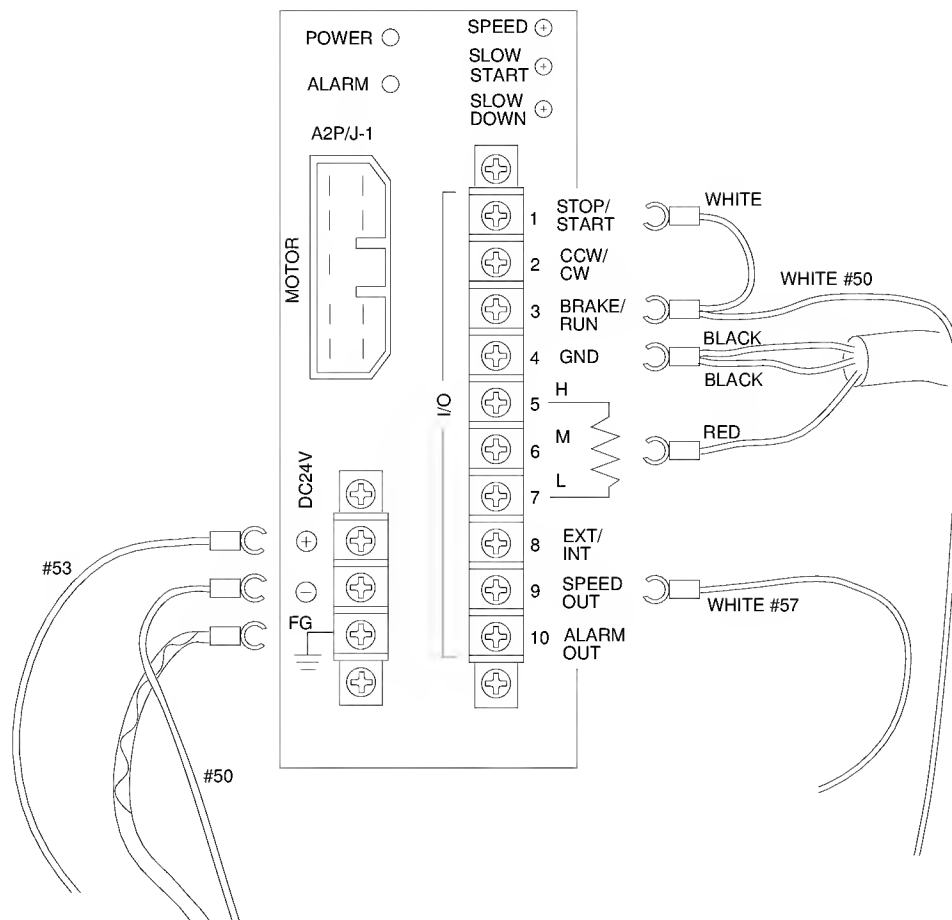
If the PROCESSOR is not on a STAND, you may need to remove the ELECTRICAL BOX from the PROCESSOR for easier access to the 4 SCREWS.

- [7] Record the positions of the wires. See page 6-14 for the correct wire connections.
- [8] Disconnect the 7 wires.
- [9] Disconnect the CONNECTOR A2P/J-1 from the DRIVE MOTOR CONTROLLER. See the figure on page 6-14.
- [10] Remove the DRIVE MOTOR CONTROLLER.
- [11] Reverse the above procedure to install a new DRIVE MOTOR CONTROLLER and to assemble the PROCESSOR.



H104_0441CCA
H104_0441CA

Replacement of the Drive Motor Controller



H104_0255DA

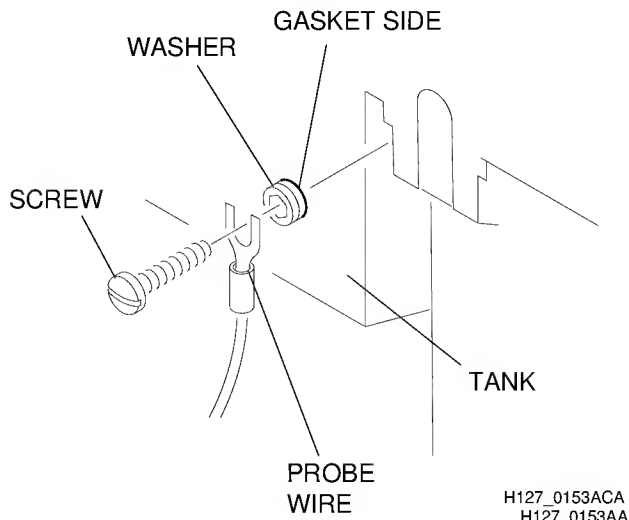
The Wire Connections on the Drive Motor Controller

Removing the Level Sensor Housing and the Level Sensor Probes

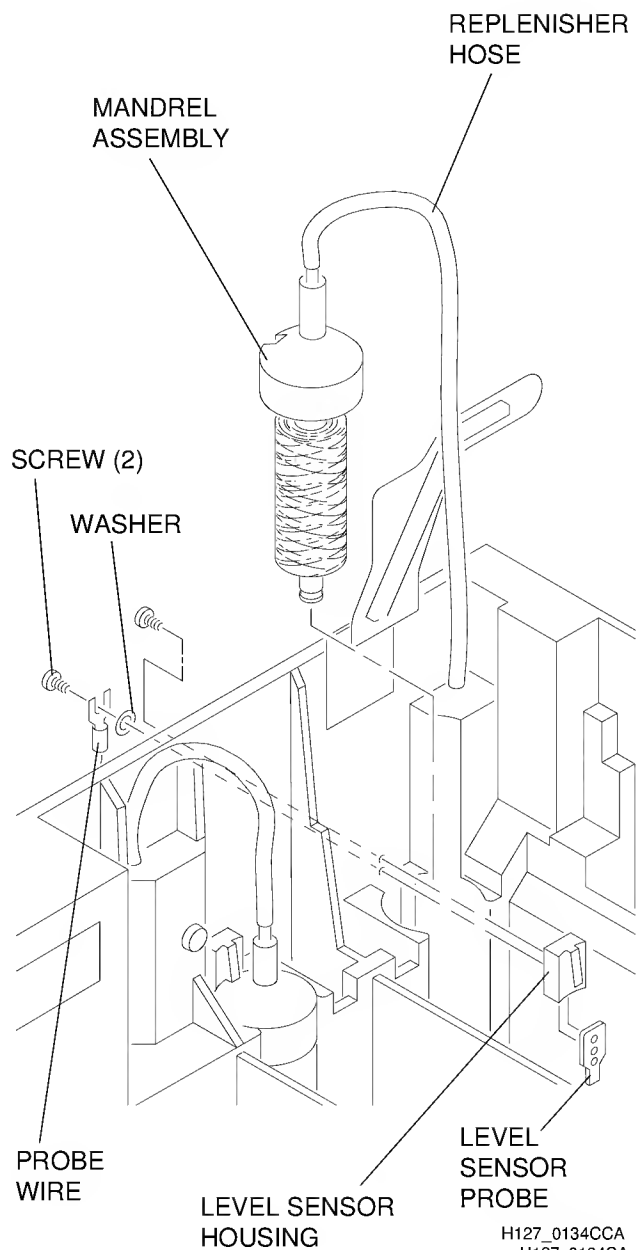
NOTE

Use this procedure for either the red developer or the blue fixer LEVEL SENSOR PROBES.

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the WET SECTION COVER and the NON-DRIVE SIDE PANEL.
- [4] Remove the 2 SCREWS and the WASHER on the outside of the TANK.
- [5] Lift the LEVEL SENSOR HOUSING to remove it.
- [6] Remove the LEVEL SENSOR PROBE from the LEVEL SENSOR HOUSING.
- [7] Reverse the procedure to install new LEVEL SENSOR PROBES or a new LEVEL SENSOR HOUSING and to assemble the PROCESSOR.
- [8] Check that the PROBE WIRE is correctly attached to the SCREW and WASHER. Install the GASKET SIDE of the WASHER against the TANK. See the figure below.



**Correct Installation of the Washer
Against the Tank**



**Replacement of the Level Sensor Housing
and the Level Sensor Probes**

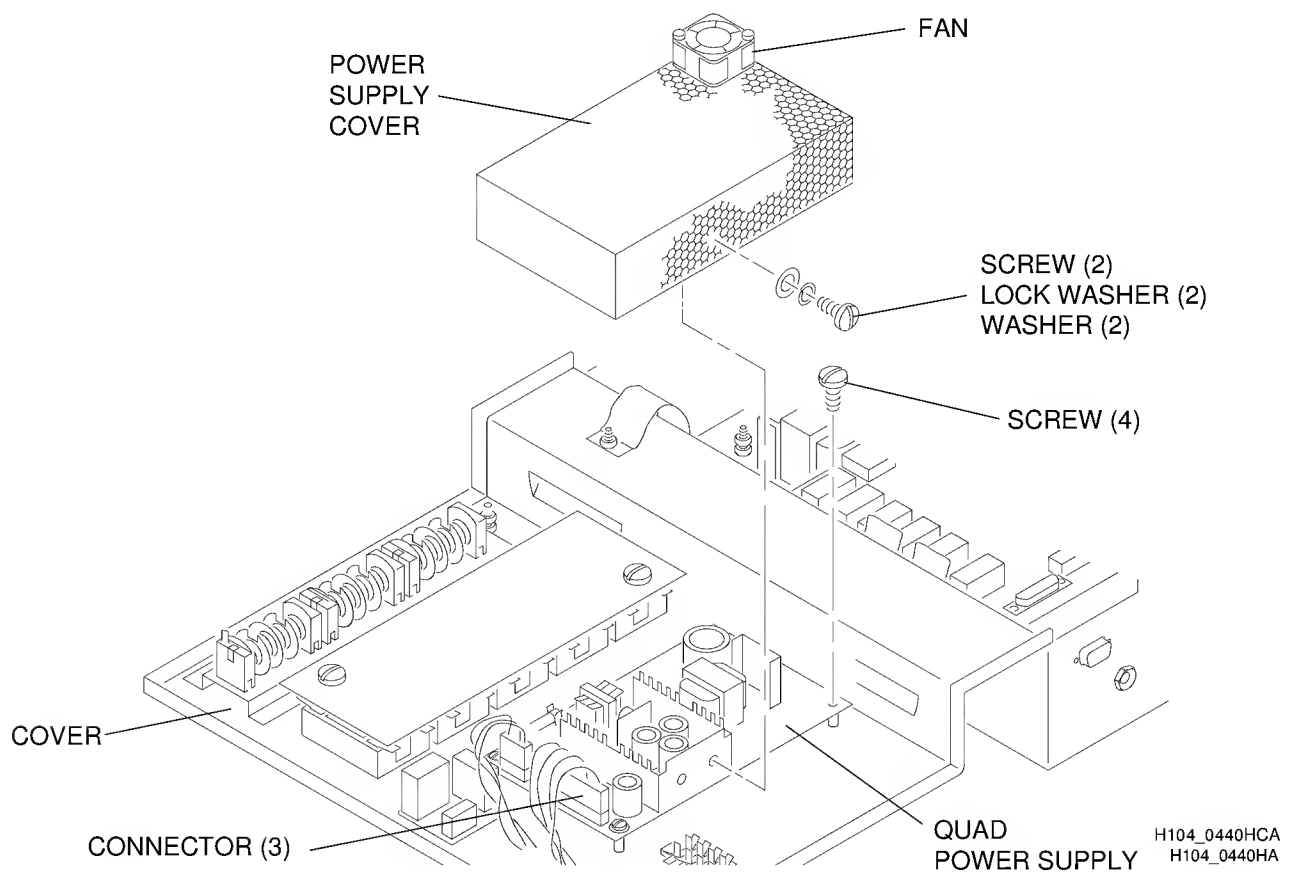
Removing the Quad Power Supply A1

CAUTION

Possible damage from electrostatic discharge.

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the EXIT PANEL.
- [4] Extend the ELECTRICAL BOX.
- [5] Open the COVER of the ELECTRICAL BOX.

- [6] Remove:
 - 2 SCREWS
 - 2 LOCK WASHERS
 - 2 WASHERS
 - POWER SUPPLY COVER with the FAN
 - 4 SCREWS that hold the QUAD POWER SUPPLY
- [7] Disconnect the 2 CONNECTORS.
- [8] Remove the QUAD POWER SUPPLY.
- [9] Reverse the above procedure to install a new QUAD POWER SUPPLY and to assemble the PROCESSOR.



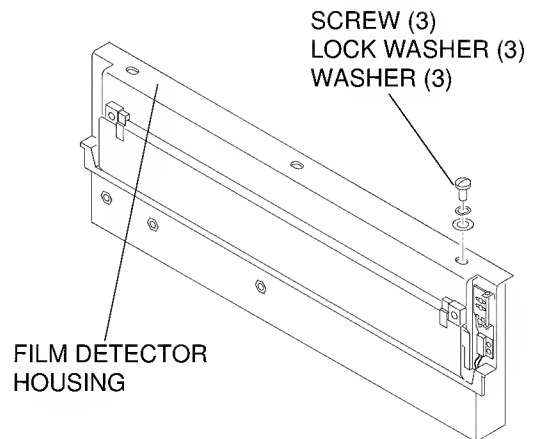
Replacement of the Quad Power Supply

Removing the 5600 Circuit Board, the Universal Film Detector

CAUTION

Possible damage from electrostatic discharge.

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - WET SECTION COVER
 - DETECTOR CROSSOVER
 - 3 SCREWS, the 3 LOCK WASHERS, and the 3 WASHERS that hold the FILM DETECTOR HOUSING



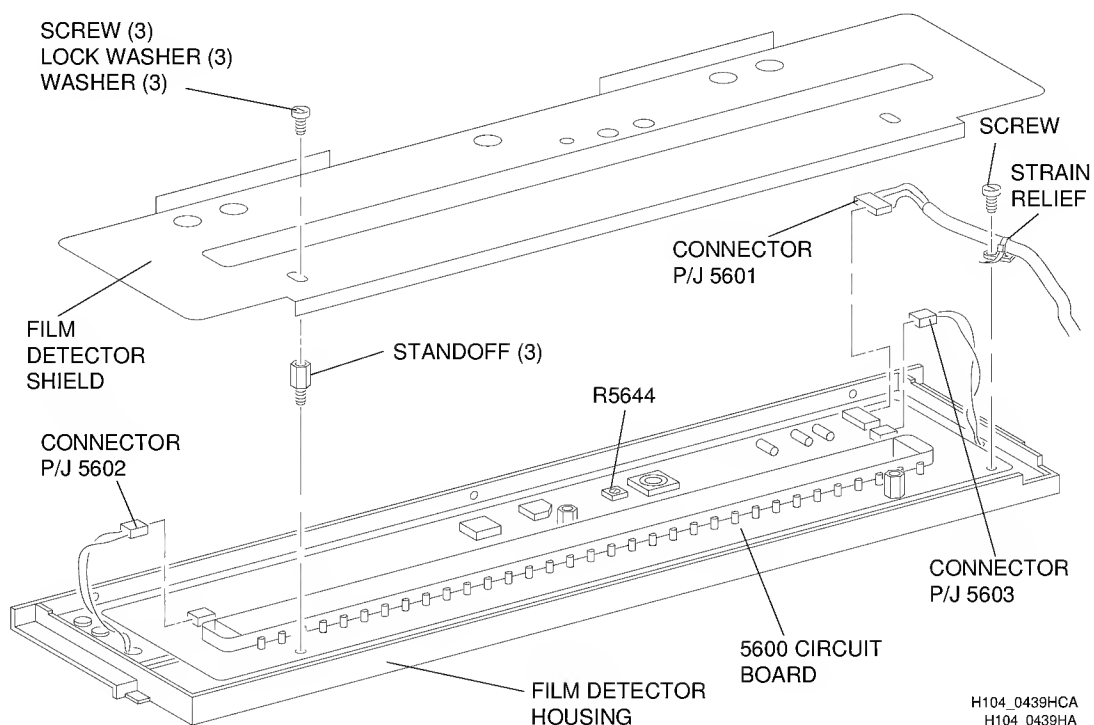
H104_0317ACA
H104_0317AA

- [4] Disconnect CONNECTOR P/J 5601 from the 5600 CIRCUIT BOARD.
- [5] Remove the SCREW and the STRAIN RELIEF.

NOTE

Not all PROCESSORS have a STRAIN RELIEF.

- [6] Remove the FILM DETECTOR HOUSING and place it on a flat surface with the 5600 CIRCUIT BOARD on the top.



H104_0439HCA
H104_0439HA

Replacement of the 5600 Circuit Board

- [7] Remove the 3 SCREWS, the 3 LOCK WASHERS, and the 3 WASHERS that hold the FILM DETECTOR SHIELD to the 5600 CIRCUIT BOARD.
- [8] Remove the FILM DETECTOR SHIELD.
- [9] Disconnect CONNECTOR P/J 5602 and CONNECTOR P/J 5603.
- [10] Remove the 3 STANDOFFS.
- [11] Remove the 5600 CIRCUIT BOARD.
- [12] Using EXTRACTION TOOL TL-4430, remove PROM U12 from the 5600 CIRCUIT BOARD. Install the PROM U12 in the new 5600 CIRCUIT BOARD.
- [13] Reverse the above procedure to install a new 5600 CIRCUIT BOARD and to assemble the PROCESSOR.
- [14] Check for correct operation of the DETECTOR SWITCHES. See page 6-21.

Adjusting the Alarm Volume on the 5600 Circuit Board

- [1] Do Steps [1] - [3] on page 6-17.
- [2] Adjust the sound of the alarm by rotating R5644. See the figure on page 6-17.
 - clockwise ↻ for **louder**
 - counterclockwise for ↻ for **softer**
- [3] Check for correct operation of the DETECTOR SWITCHES. See page 6-21.

Installation of the New Style Film Detector Switches, S1 and S2

NOTE

Improved DETECTOR SWITCH BRACKETS are now available. For installation, the following parts are necessary. The older style DETECTOR SWITCH BRACKETS are not available.

Part No.	Description	Quantity
981892	Detector Switch Bracket, Non-Drive Side	1
981893	Detector Switch Bracket, Drive Side	1
288235	Nut Plate	2

- [1] Deenergize the PROCESSOR. See page 1-5.

[2] Remove:
 - WET SECTION COVER
 - DETECTOR CROSSOVER

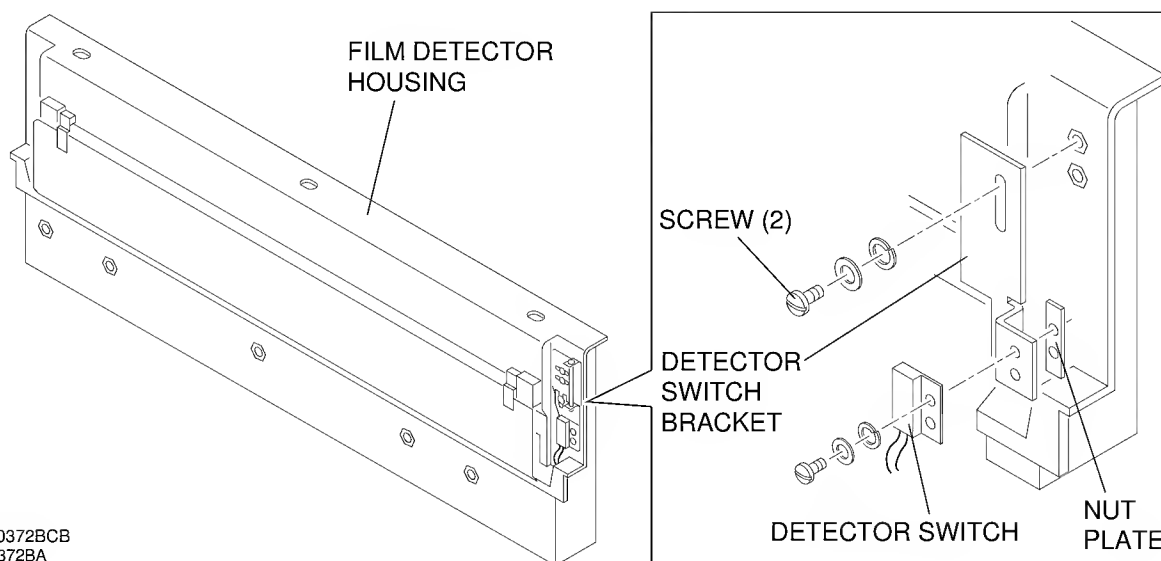
[3] Remove the existing SWITCH PLATE ASSEMBLIES.

(a) From the drive side of the FILM DETECTOR HOUSING, remove and keep the 2 ASSEMBLY SCREWS that hold the SWITCH PLATE ASSEMBLY to the FILM DETECTOR HOUSING.

(b) Remove and keep the 2 SCREWS that hold the DETECTOR SWITCH to the SWITCH PLATE ASSEMBLY.

(c) Remove and discard the existing SWITCH PLATE ASSEMBLY.
- H104_0371BCB
H104_0371BA
- Removing the Old Style Switch Plate Assembly from the Film Detector Housing
- 2B6845
- 6-19

- [4] Using the 2 SCREWS removed in Step (b), install the DETECTOR SWITCH and the NUT PLATE to the new DETECTOR SWITCH BRACKET.
- [5] Using the 2 ASSEMBLY SCREWS removed in Step (a), install the new DETECTOR SWITCH BRACKET to the FILM DETECTOR HOUSING.
- [6] Do Steps [3] - [5] for the non-drive side of the FILM DETECTOR HOUSING.
- [7] Install the DETECTOR CROSSOVER and the WET SECTION COVER in the PROCESSOR.
- [8] Energize the PROCESSOR.
- [9] Check the operation of the DETECTOR SWITCHES and, if necessary, adjust the position. See page 6-21.



H104_0372BCB
H104_0372BA

Installing the Detector Switch and Nut Plate to the New Detector Switch Bracket

Checking the Detector Switches

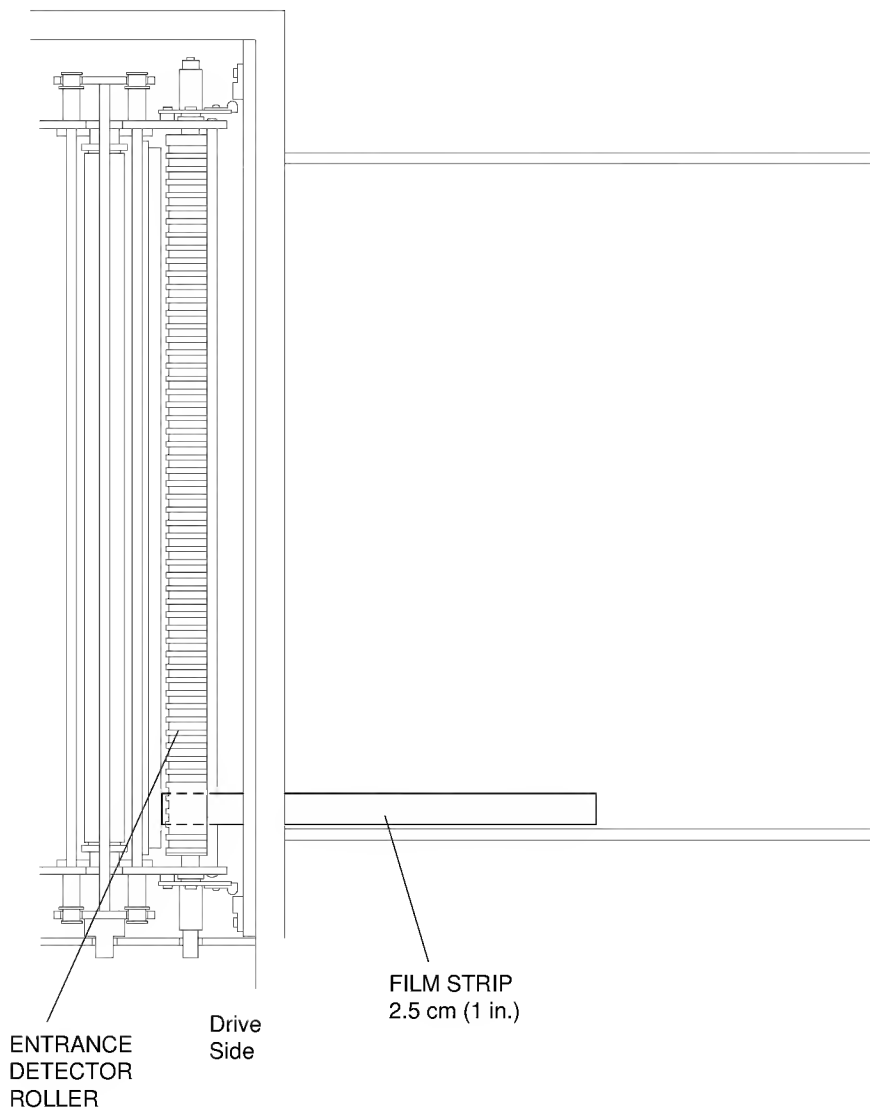
- [1] Check that all film is removed from between the ENTRANCE DETECTOR ROLLERS.
- [2] Connect the PORTABLE COMPUTER to the 15-PIN DIAGNOSTIC CONNECTOR on the ELECTRICAL BOX.

NOTE

See the User Instructions, Publication Part No. 699614, for the operation of the diagnostic procedures.

- [3] Enter the "SPECIFIC TEST MODE" of the diagnostic program on the PORTABLE COMPUTER.

- [4] Select the "PROCESSOR SENSOR TEST". The "PROCESSOR SENSOR TEST" will provide you with the status of the 2 film DETECTOR SWITCHES.
- [5] Check that the message "No film detected" is displayed on the PORTABLE COMPUTER.
- [6] Lift the top ENTRANCE DETECTOR ROLLER, and insert the 2.5 cm (1 in.) FILM STRIP between the ENTRANCE DETECTOR ROLLERS on the drive side of the PROCESSOR.



H104_0370DCA
H104_0370DC

Feeding the Film Strip Between the Entrance Detector Rollers

- [7]** Check that the message "Film detected" is displayed on the PORTABLE COMPUTER.
- [8]** Do Steps [1] - [7] again for the non-drive side of the PROCESSOR.
- [9]** Do Steps [1] - [7] again for the center of the PROCESSOR.
- [10]** If necessary, adjust the position of the DETECTOR SWITCHES. See the page 6-23.
- [11]** When the DETECTOR SWITCHES are adjusted correctly, disconnect the PORTABLE COMPUTER.

Adjusting the Film Detector Switches

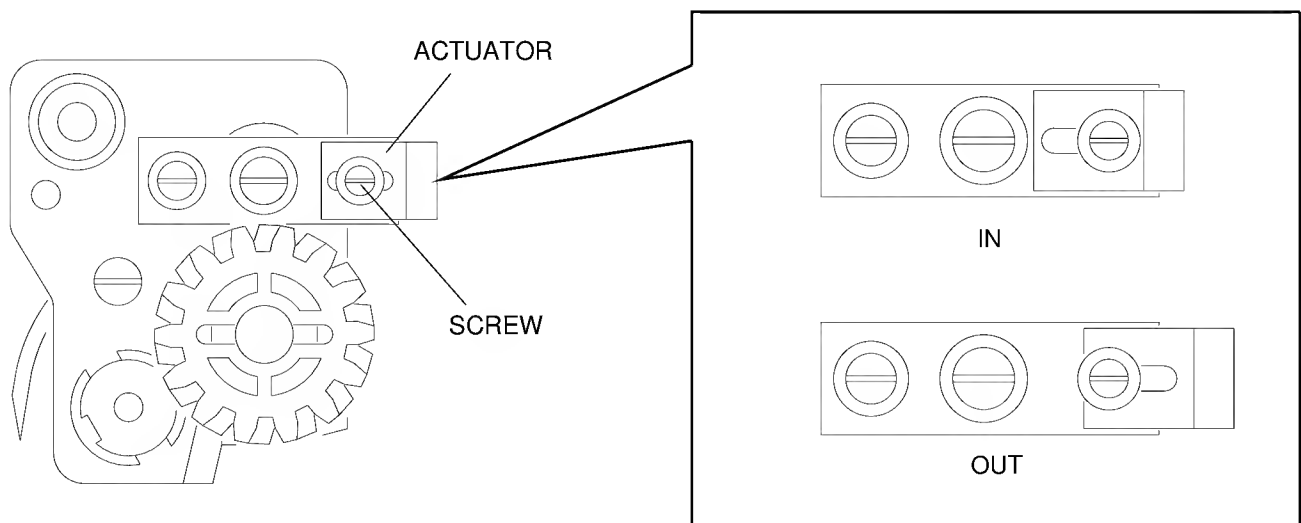
IMPORTANT

Do all 3 adjustments to the DETECTOR SWITCHES.

Adjusting the ACTUATORS

[1] Adjust the position of the **drive side** ACTUATOR.

- (a) Place the DETECTOR CROSSOVER on a flat work surface with the drive side toward you. See the figure below.
- (b) Check that the ACTUATOR is in the "IN" position. See the figure.
If the ACTUATOR is in the "OUT" position:
 1. Loosen the SCREW.
 2. Move the ACTUATOR to the "IN" position.
 3. Tighten the SCREW.



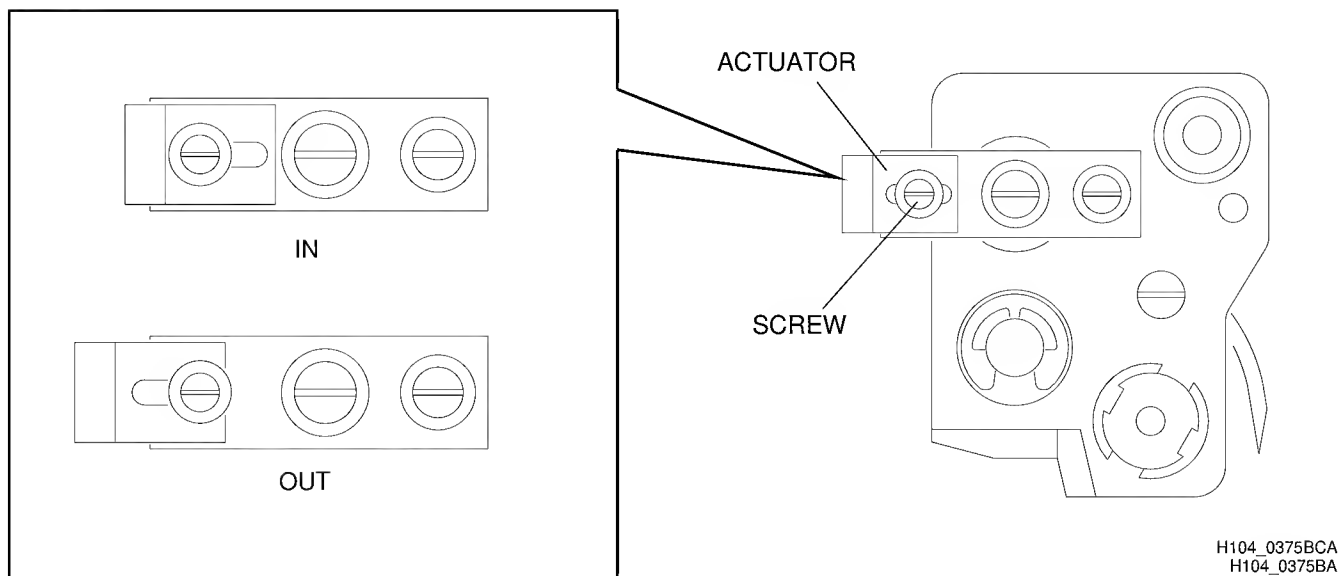
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Adjusting the Position of the Actuator on the Drive Side of the Detector Crossover

[2] Adjust the Position of the **non-drive side ACTUATOR.**

- (a)** Place the DETECTOR CROSSOVER on a flat work surface with the non-drive side toward you. See the figure below.
- (b)** Check that the ACTUATOR is in the “IN” position. See the figure.
If the ACTUATOR is in the “OUT” position:
 - 1.** Loosen the SCREW.
 - 2.** Move the ACTUATOR to the “IN” position.
 - 3.** Tighten the SCREW.

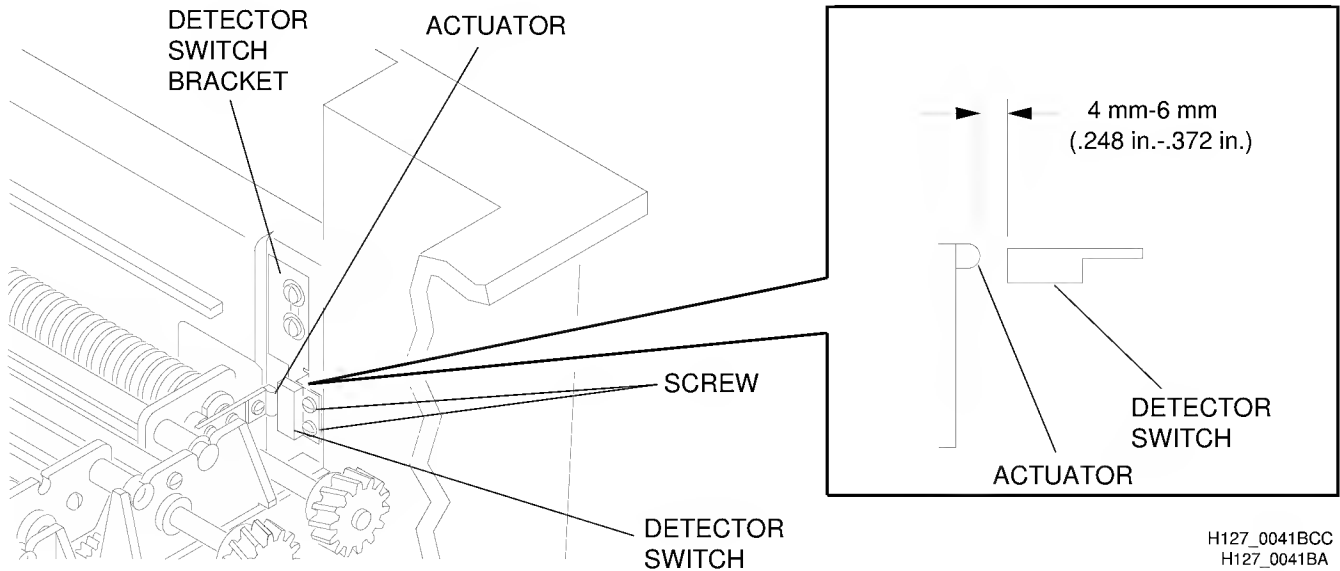
[3] Install the DETECTOR CROSSOVER in the PROCESSOR.



**Adjusting the Position of the Actuator on the
Non-Drive Side of the Detector Crossover**

Adjusting the Detector Switches from Side to Side

- [4] Locate the DETECTOR SWITCH on the drive side of the PROCESSOR.
- [5] Loosen the 2 SCREWS that hold the DETECTOR SWITCH to the DETECTOR SWITCH BRACKET.
- [6] Move the DETECTOR SWITCH until the DETECTOR SWITCH is 4 - 6 mm (3/16 - 1/4 in.) from the edge of the ACTUATOR.
- [7] Check that the DETECTOR SWITCH remains in the vertical position.
- [8] Tighten the 2 SCREWS that hold the DETECTOR SWITCH to the DETECTOR SWITCH BRACKET.
- [9] Do Steps [4] - [8] again for the DETECTOR SWITCH on the non-drive side of the PROCESSOR.



Adjusting the Detector Switch from Side to Side

Adjusting the Detector Switches Up and Down

NOTE

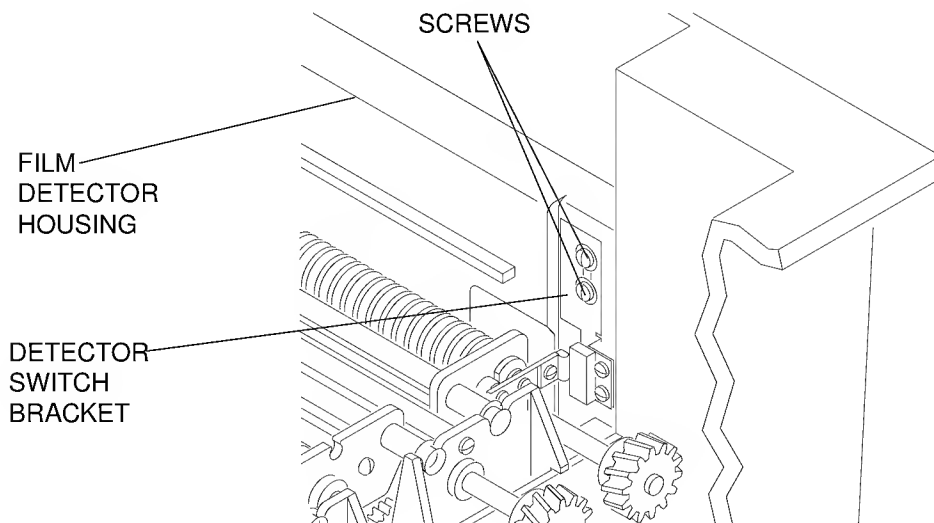
Before you can adjust the height of the drive or non-drive side DETECTOR SWITCH, **both** DETECTOR SWITCHES must be moved to the highest position.

- [10] On the drive side of the PROCESSOR:
 - (a) Loosen the 2 SCREWS that hold the DETECTOR SWITCH BRACKET to the FILM DETECTOR HOUSING.
 - (b) Move the DETECTOR SWITCH BRACKET to the highest position.
- [11] Do Step [10] with the DETECTOR SWITCH BRACKET on the non-drive side of the PROCESSOR:
- [12] Connect the PORTABLE COMPUTER to the 15-PIN DIAGNOSTIC CONNECTOR on the ELECTRICAL BOX.

NOTE

See the User Instructions, Publication Part No. 699614, for the operation of the diagnostic procedures.

- [13] Enter the "SPECIFIC TEST MODE" of the diagnostic program on the PORTABLE COMPUTER.
- [14] Select the "PROCESSOR SENSOR TEST". The "PROCESSOR SENSOR TEST" will provide you with the status of the 2 film DETECTOR SWITCHES.
- [15] Adjust the drive side DETECTOR SWITCH.
 - (a) Lift the top ENTRANCE DETECTOR ROLLER, and insert the 2.5 cm (1 in.) FILM STRIP between the ENTRANCE DETECTOR ROLLERS on the drive side of the PROCESSOR.
 - (b) Slowly, move the DETECTOR SWITCH BRACKET down until the PORTABLE COMPUTER displays a "Film detected" message.



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Adjusting the Height of the Detector Switch Bracket

- (c) Move the DETECTOR SWITCH BRACKET down approximately another 1 - 2 mm (approximately 1/16 in.).

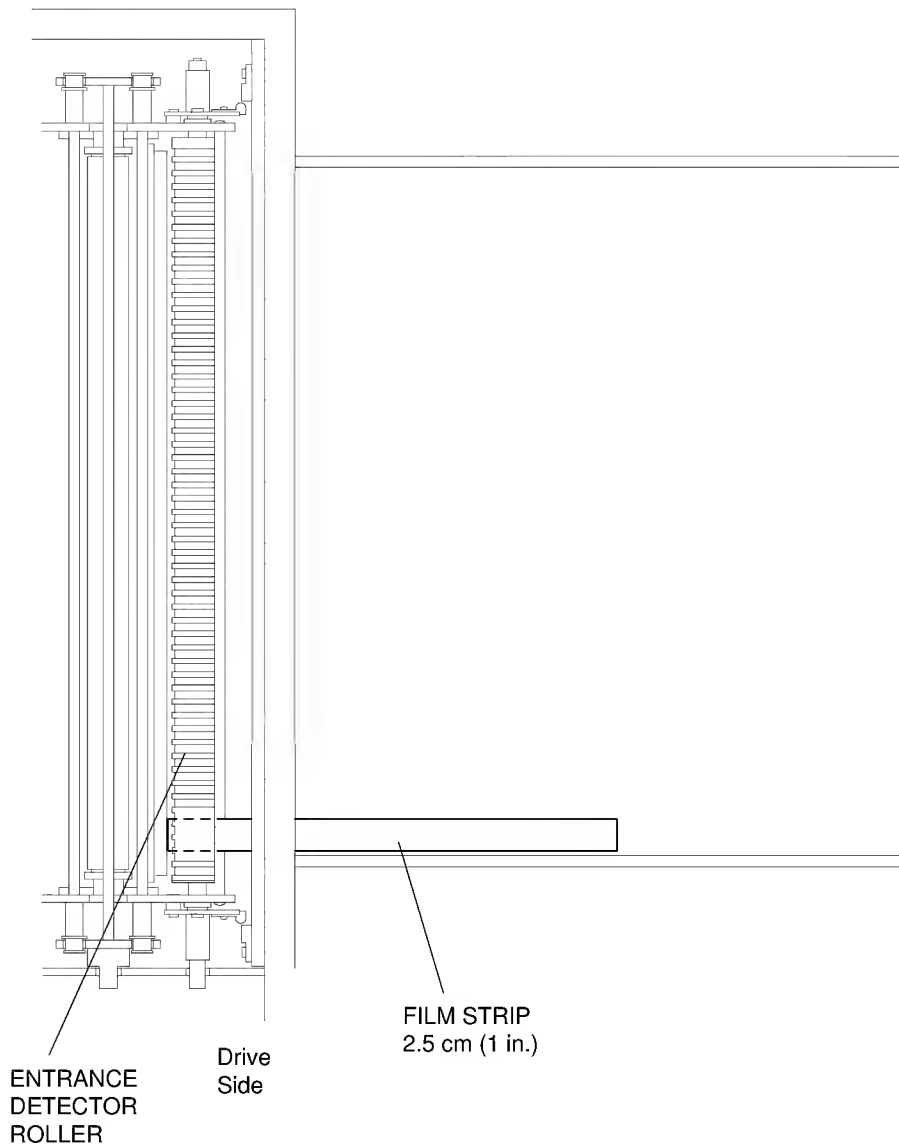
NOTE

Be sure that the DETECTOR SWITCH BRACKET remains in the vertical position.

- (d) Carefully, tighten the 2 SCREWS to hold the DETECTOR SWITCH BRACKET in position.
- (e) Remove the 2.5 cm (1 in.) FILM STRIP from between the ENTRANCE DETECTOR ROLLERS.

- [16] Adjust the non-drive side DETECTOR SWITCH.

- (a) Locate the DETECTOR SWITCH on the non-drive side of the PROCESSOR.
- (b) Do Steps (a) - (e) on pages 6-26 and 6-27 for the DETECTOR SWITCH BRACKET on the non-drive side of the PROCESSOR. Insert the FILM STRIP on the non-drive side of the PROCESSOR.



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H104_0370DC

Feeding the Film Strip Between the Entrance Detector Rollers

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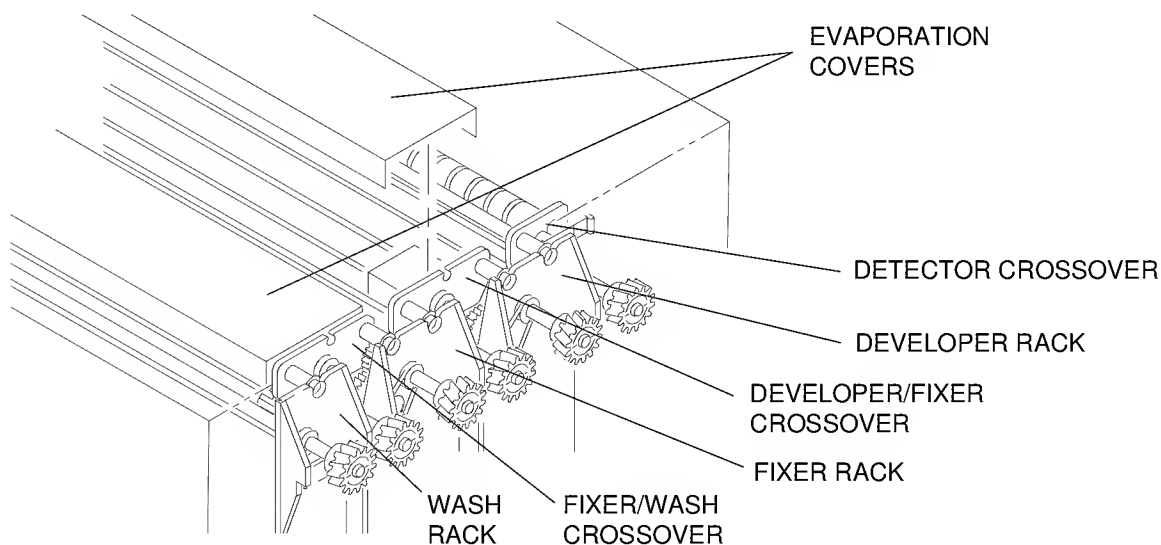
Preventive Maintenance

IMPORTANT

Reliable operation of the PROCESSOR requires that all parts are cleaned, adjusted, and lubricated correctly. More frequent maintenance may be necessary because of site characteristics or actual usage. The following guidelines are for PROCESSORS installed according to the site specifications.

Weekly Preventive Maintenance

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove the WET SECTION COVER, the EVAPORATION COVERS, all CROSSOVERS, and the WASH RACK.
- [4] Rinse the 3 CROSSOVERS and the WASH RACK with warm water, 44°C (110°F) or less. Wipe the ROLLERS and the GUIDE SHOES with a damp, soft, synthetic sponge.
- [5] Allow the DETECTOR CROSSOVER to air dry before you install it in the PROCESSOR.
- [6] Check that all ROLLERS on all CROSSOVERS and on the WASH RACK rotate freely. Check the squareness of the CROSSOVERS and the WASH RACK. See pages 2-3 and 2-4.
- [7] Check that the CROSSOVER TROUGHS are not broken or do not have cracks.
- [8] Install the WASH RACK, the CROSSOVERS, the EVAPORATION COVERS, and the WET SECTION COVER. Check that each assembly seats firmly.
- [9] Wipe any chemical deposits from the processing section of the PROCESSOR.
- [10] Energize the PROCESSOR and check for correct operation.
- [11] Process a test film and check the transport assemblies.



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H104_0072BA

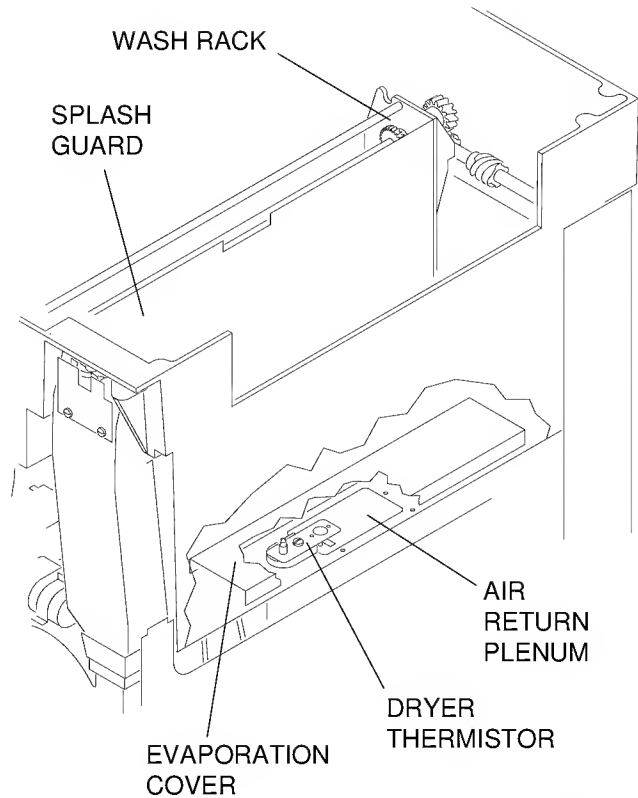
Monthly Preventive Maintenance

- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Remove:
 - (a) WET SECTION COVER
 - (b) EVAPORATION COVERS
 - (c) all CROSSOVERS
 - (d) DRYER RACK
- [4] Check that the holes in the 2 SPRAY BARS are clean and open.

NOTE

PROCESSORS with Mod 17 installed do not have SPRAY BARS. Advance to Step 5 on page 7-3.

- (a) To protect the ELECTRICAL BOX from water, place an EVAPORATION COVER over the DRYER THERMISTOR and the AIR RETURN PLENUM. See the figure at the right.
- (b) Remove the SPLASH GUARD from the WASH RACK.
- (c) Energize the PROCESSOR.
- (d) Using the diagnostics procedures on the PORTABLE COMPUTER, select:
 - **Specific Test Mode**
 - **Processor Component Test**
- (e) Change "Wash Input Water Solenoid" to **On**.
- (f) Observe whether water comes through all the holes in the SPRAY BAR that is next to the DRYER RACK.
- (g) Lift the WASH RACK a small distance and check that water comes through all the holes in the other SPRAY BAR.



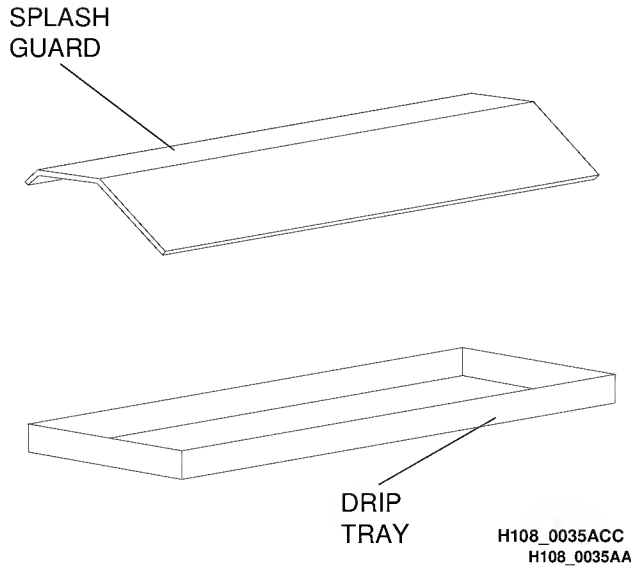
H104_0461GCA
H104_0461GA

Covering the Dryer Thermistor and the Air Return Plenum

- (h) **Immediately** change "Wash Input Water Solenoid" to **Off**.
- (i) If necessary, clean the SPRAY BARS. See page 2-7. If all holes in the SPRAY BARS are open, advance to Step [5] on page 7-3.

CAUTION

Prevent contamination of the developer and fixer solutions when removing the FIXER RACK and the DEVELOPER RACK, by placing the SPLASH GUARD between the DEVELOPER TANK and the FIXER TANK. Use the DRIP TRAY for removal or installation of the RACKS.



- [5] Install the SPLASH GUARD between the DEVELOPER TANK and the FIXER TANK.
- [6] Remove:
 - (a) FIXER RACK
 - (b) SPLASH GUARD
 - (c) DEVELOPER RACK
- [7] Rinse all RACKS and CROSSOVERS with warm water, 44°C (110°F) or less. Wipe the ROLLERS and the GUIDE SHOES with a soft, synthetic sponge.
- [8] Remove and clean the CROSSOVER TROUGHS. Check that the holes in the CROSSOVER TROUGHS are free from biological growth or other obstructions.
- [9] Install the CROSSOVER TROUGHS.

- [10] On all RACKS, check:
 - (a) That all ROLLERS rotate freely
 - (b) That the ROLLERS are clean and smooth
 - (c) That the GEARS do not have excessive wear or burrs
 - (d) That the BEARINGS do not have excessive wear
 - (e) For broken, missing, or corroded E-RINGS and SPRINGS
- [11] If necessary, install new parts.
- [12] Check the RACKS for squareness. See pages 2-3 and 2-4.
- [13] Check that the AIR TUBES are installed in the correct positions in the DRYER RACK. See the diagram on the DRYER COVER of the DRYER RACK.
- [14] Check that the SLOTS in the AIR TUBES are clean. If necessary, clean the AIR TUBES with a bottle brush and rinse with water.
- [15] Wipe any chemical deposits from the processing section of the PROCESSOR.
- [16] Change the DEVELOPER FILTER. See page 5-6.
- [17] Allow the DETECTOR CROSSOVER to air dry before you install it in the PROCESSOR.
- [18] Install the RACKS.
- [19] Connect the WATER DISCONNECT.
- [20] Install:
 - CROSSOVERS
 - YOKE
 - EVAPORATION COVERS
 - WET SECTION COVER
- [21] Check that each assembly seats firmly.
- [22] Clean the REPLENISH STRAINERS that are between the REPLENISHMENT TANKS and the REPLENISHMENT PUMPS.
- [23] Check the water supply FILTER. If necessary, change the FILTER.

CAUTION

- Any obstruction such as biological growth or small bends or an upward sloping WASH DRAIN HOSE can cause wash water to return to the WASH TANK causing an overflow of water and possible damage to the ELECTRICAL BOX.
- Concentrations of chlorine bleach higher than 10% or leaving the chlorine bleach in the PROCESSOR for longer than 30 minutes can cause damage to the PROCESSOR.

- [24] Check the WASH DRAIN for biological growth, small bends, or other obstructions.

To remove biological growth:

- (a) Fill the wash system with a 10% solution of chlorine bleach, including **all HOSES** and the HOSES to the floor drain.
- (b) Wait a **minimum of 20 minutes and a maximum of 30 minutes**.
- (c) Drain the chlorine bleach solution and rinse the system thoroughly with water before returning the PROCESSOR to normal use.

WARNING

- Drains must be made of chemically resistant, non-corrosive material. Use PVC or the equivalent.
- The drain must have a minimum diameter of 7.6 cm (3 in.) and be free of obstruction.
- Drain service must comply with all local codes.

- [25] Correctly route the WASH DRAIN HOSE to slope down toward the WASH DRAIN. If necessary, use REINFORCED HOSES that resist making small bends. Right angle ELBOW FITTINGS are also available. The Part Numbers are:
- 696442 - Reinforced Hose, 5/8-in. I.D. Order by the foot.
 - 1C4521 - Elbow Fitting, 5/8 in.
 - 696441 - Reinforced Hose, 1-in. I.D. Order by the foot.
 - 1C4524 - Elbow Fitting, 1 in.
- [26] Energize the PROCESSOR and check for correct operation.
- [27] Process a test film and check the transport assemblies.
- [28] Check the negative static pressure at the EXHAUST VENT for the DRYER. See Service Bulletin No. 101, October 1992.

NOTE

An AUXILIARY VENTILATION FAN KIT / 110 V is available for sites that do not meet exhaust requirements. Order Part No. 264503.

Every 3 Months, or as Required, Preventive Maintenance

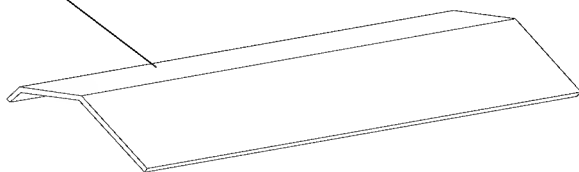
- [1] Deenergize the PROCESSOR. See page 1-5.
- [2] Lift the TOP COVER.
- [3] Open the FIXER and DEVELOPER DRAIN VALVES to drain the solutions from the PROCESSOR.
- [4] Remove:
 - (a) WET SECTION COVER
 - (b) EVAPORATION COVERS
 - (c) all CROSSOVERS ASSEMBLIES
 - (d) DRYER RACK
- [5] Check, and clean if necessary, the SPRAY BARS. See Step [4] on page 7-2 and the procedure on page 2-7.

CAUTION

Prevent contamination of the developer and fixer solutions when removing the FIXER RACK and the DEVELOPER RACK, by placing the SPLASH GUARD between the DEVELOPER TANK and the FIXER TANK. Use the DRIP TRAY for removal or installation of the RACKS.

- [6] Install the SPLASH GUARD between the DEVELOPER TANK and the FIXER TANK.

SPLASH
GUARD



DRIP
TRAY



H108_0035ACC
H108_0035AA

- [7] Remove:

- (a) FIXER RACK
- (b) SPLASH GUARD
- (c) DEVELOPER RACK

WARNING

- Carefully follow all safety precautions and directions included with the *Kodak* FIXER/WASH SYSTEM CLEANER and *Kodak* DEVELOPER SYSTEM CLEANER AND NEUTRALIZER.
- The RACKS in the PROCESSOR have hollow rollers. Use the instructions for cleaning RACKS with hollow rollers. Do not immerse RACKS with hollow rollers in SYSTEM CLEANER. SYSTEM CLEANER that remains inside the rollers will contaminate the processing solutions.
- When circulating SYSTEM CLEANER or water through the recirculation system, energize the developer COOLING SOLENOID, or:
 - The effectiveness of the DEVELOPER SYSTEM CLEANER AND NEUTRALIZER will be greatly reduced because of the developer remaining in the HEAT EXCHANGER.
 - The DEVELOPER SYSTEM CLEANER AND NEUTRALIZER remaining in the HEAT EXCHANGER will contaminate the new developer when the PROCESSOR is returned to operation.
- [8] Clean the DEVELOPER RACK and the DEVELOPER TANK with *Kodak* DEVELOPER SYSTEM CLEANER AND NEUTRALIZER, CAT No. 843 4615.
- [9] Clean the FIXER RACK, the WASH RACK, and the FIXER TANK with *Kodak* FIXER/WASH SYSTEM CLEANER, CAT No. 139 5110.
- [10] Clean the WASH TANK with *Kodak* FIXER/WASH SYSTEM CLEANER or, if biological growth exists, with a 10% solution of chlorine bleach.

- [11] If necessary, clean the LEVEL SENSOR PROBES with the correct SYSTEM CLEANER.
- [12] Rinse the CROSSOVERS and the EVAPORATION COVERS with warm water, 44°C (110°F) or less. Wipe the ROLLERS and the GUIDE SHOES with a soft, synthetic sponge.

NOTE

If necessary, you may use DEVELOPER SYSTEM CLEANER AND NEUTRALIZER on the DEVELOPER/FIXER CROSSOVER and FIXER/WASH SYSTEM CLEANER on the FIXER/WASH CROSSOVER.

- [13] Remove and clean the CROSSOVER TROUGHS. Check that the holes in the CROSSOVER TROUGHS are free from biological growth or other obstructions.
- [14] Install the CROSSOVER TROUGHS.
- [15] On all RACKS, check:
- (a) That all ROLLERS rotate freely
 - (b) That the ROLLERS are clean and smooth
 - (c) That the GEARS do not have excessive wear or burrs
 - (d) That the BEARINGS do not have excessive wear
 - (e) For broken, missing, or corroded E-RINGS and SPRINGS
 - (f) The CHAIN for wear and correct adjustment.
- [16] If necessary, install new parts.
- [17] Check the RACKS for squareness. See pages 2-3 and 2-4.
- [18] Check that the AIR TUBES are installed in the correct positions. See the diagram on the DRYER COVER of the DRYER RACK.
- [19] Check that the SLOTS in the AIR TUBES are clean and in the correct positions. If necessary, clean the AIR TUBES with a bottle brush and rinse with water.
- [20] Wipe above and below the ENTRANCE SLOT on the 5600 CIRCUIT BOARD with a damp, synthetic sponge.
- [21] Wipe any chemical deposits from the processing section of the PROCESSOR.
- [22] Install a new DEVELOPER FILTER. See page 5-6.
- [23] Allow the DETECTOR CROSSOVER to air dry before you install it in the PROCESSOR.
- [24] Install:
- RACKS
 - CROSSOVERS
 - EVAPORATION COVERS
 - WET SECTION COVER
- [25] Check that each assembly seats firmly.
- [26] Clean the REPLENISHER STRAINERS located between the REPLENISHMENT TANKS and the REPLENISHMENT PUMPS.
- [27] Check the water supply FILTER. If necessary, change the FILTER.



- Any obstruction such as biological growth or small bends or an upward sloping WASH DRAIN HOSE can cause wash water to return to the WASH TANK causing an overflow of water and damage to the ELECTRICAL BOX.
 - Concentrations of chlorine bleach higher than 10% or leaving the chlorine bleach in the PROCESSOR for longer than 30 minutes can cause damage to the PROCESSOR.
- [28] Check the WASH DRAIN for biological growth, small bends, or other obstructions.
- To remove biological growth:
- (a) Fill the wash system with a 10% solution of chlorine bleach, including **all HOSES** and the HOSES to the floor drain.
 - (b) Wait a **minimum of 20 minutes and a maximum of 30 minutes**.

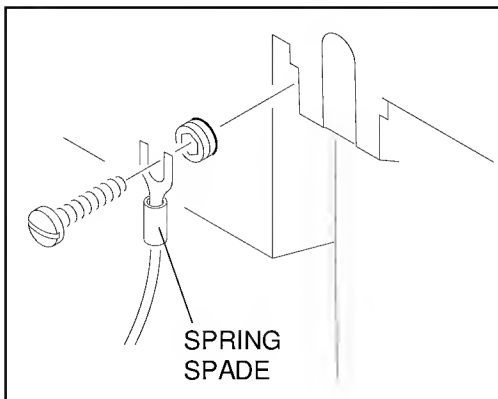
- (c) Drain the chlorine bleach solution, and rinse the system thoroughly with water before returning the PROCESSOR to normal use.

WARNING

- Drains must be made of chemically resistant, non-corrosive material. Use PVC or the equivalent.
- The drain must have a minimum diameter of 7.6 cm (3 in.) and be free of obstruction.
- Drain service must comply with all local codes.

- [29] Correctly route the WASH DRAIN HOSE to slope down toward the WASH DRAIN. If necessary, use REINFORCED HOSES that resist making small bends. Right angle ELBOW FITTINGS are also available. The Part Numbers are:

- 696442 - Reinforced Hose, 5/8-in. I.D. Order by the foot.
- 1C4521 - Elbow Fitting, 5/8 in.
- 696441 - Reinforced Hose, 1-in. I.D. Order by the foot.
- 1C4524 - Elbow Fitting, 1 in.

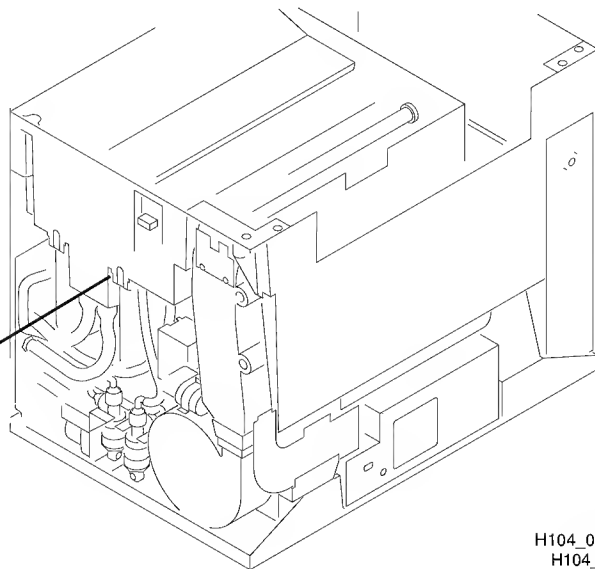


- [30] Check the DRIVE CHAIN.

- (a) If the DRIVE CHAIN is dry, apply lubricant to the DRIVE CHAIN. Use NLG1 - No. 2 LITHIUM BALL AND ROLLER BEARING GREASE TL-2324.
- (b) If the DRIVE CHAIN is rusty, remove it and install a new DRIVE CHAIN.
- (c) Adjust the tension of the DRIVE CHAIN. See page 3-5.

- [31] Check the SPRING SPADES on the LEVEL SENSOR PROBES for corrosion. If necessary, clean or install new SPRING SPADES.

- [32] Check the operation of the DETECTOR SWITCHES. See page 6-21. If necessary, adjust the DETECTOR SWITCHES. See page 6-23.



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Cleaning the Spring Spades

- [33]** Close the DRAIN VALVES and fill the processing TANKS with processing solutions. See the Operator Manual for filling instructions.
- [34]** Energize the PROCESSOR and check for correct operation.
- [35]** Process a test film and check the transport assemblies.
- [36]** Check the negative static pressure at the EXHAUST VENT for the DRYER. See Service Bulletin No. 101, October 1992.

NOTE

An AUXILIARY VENTILATION FAN KIT / 110 V is available for sites that do not meet exhaust requirements. Order Part No. 264503.

- [37]** Calibrate the REPLENISHMENT PUMPS. See the section "Calibration of the Replenishment System" in the Operator Manual or use the diagnostics on the PORTABLE COMPUTER.

Preventive Maintenance for the <i>Kodak X-Omat 270 RA Processor</i>			
Part or Assembly	Schedule*		
	Weekly	Monthly	3 Months
Crossover - Detector	C		
Crossover - Developer/Fixer	C		
Crossover - Fixer/Wash	C		
Rack - Wash	C		C(2)
Rack - Wash, Spray Bars		I,C(2)	
Rack - Developer		I,C	C(1)
Rack - Fixer		I,C	C(2)
Rack - Dryer		I,C	
Rack - Top Exit		I,C	
Rack - Bearings, Chains, and Drive Gear		I	
Rack - Squareness		I	
Tubes - Dryer Air		I,C	
Filter - Developer		R	
Filters - Replenisher Strainers		C	
Filter - Water Supply		R	
Hose - Drain		I,R	
Exhaust - Ventilation		T	
Chain - Drive Motor			I,L
Probes - Level Sensor			C
Spring Spades - Level Sensor Probe			C(3)
Processor Tank - Developer			C(1)
Processor Tanks - Fixer and Wash			C(2)
Replenishment Pumps - Calibration			T
Detector Switches			T
5600 Circuit Board Housing			C(4)

C = Rinse and clean carefully and completely using warm water and a soft synthetic sponge.

C(1) = Clean with *Kodak DEVELOPER SYSTEM CLEANER AND NEUTRALIZER*.

C(2) = Clean with *Kodak FIXER/WASH SYSTEM CLEANER*.

C(3) = Clean any corrosion from the Spring Spades.

C(4) = Clean with a damp, synthetic sponge.

I = Inspect for condition and adjust or install new parts, if necessary.

L = Lubricate with recommended material.

R = Replace, if necessary.

T = Test and adjust, if necessary.

* Actual usage and site characteristics may require shorter intervals between maintenance. These guidelines are for sites adhering to Site Specifications issued by Kodak. The customer or the trained service personnel may perform the weekly preventive maintenance.

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Publication Change Table

Revision Date	ECO No.	PCN No.	PCN Pub. No.	Affected Pages	Filename	Description
May 1994	2592-265	1	2B6845	All	3059sm_d.txt	Supersedes Service Manual, Publication No. 636718, dated 4/91. Updates information and illustrations throughout.

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Health Sciences Division

